

MANUAL

INL/EXT-19-53844

Revision 0

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RAVEN regression tests' description

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1 Introduction

This document has been automatically generated by the script “raven\developer_tools\createRegressionTestDocumentation.py” Currently there are 931 regression tests in the RAVEN framework. The % of tests that are commented is currently equal to 98.71106337271752 %.

2 Documented Tests

Regression tests for the *Python* RAVEN framework are found in `raven/tests/framework`. There is a hierarchy of folders with tests collected by similar testing. Every test is described in a special XML node (`< TestInfo >`) within the `< Simulation >` block. An example is reported below:

```
<Simulation>
...
<TestInfo>
  <name>framework/path/to/test/label</name>
  <author>AuthorGitLabTag</author>
  <created>YYYY-MM-DD</created>
  <classesTested>Module.Class, Module.Class</classesTested>
  <description>
    Paragraph describing work-flows, modules, classes,
    entities, etc.,
    how they are tested, and any other notes
  </description>
  <requirements>RequirementsLabel</requirements>
  <analytic>paragraph description of analytic test</analytic>
  ...
</TestInfo>
...
</Simulation>
```

The `< requirements >` and `< analytic >` nodes are optional, for those tests who satisfy an NQA design requirement and or have an analytic solution documented in the analytic tests document. Other notes on block contents:

- `< name >`: this is the test framework path, as well as the name (label) assigned in the tests file block. This is the path and name that show up when running the tests using the testing harness (`run_tests`)
- `< author >`: this is the GitLab tag of the author who constructed this test originally, i.e. *alfoa* for `@alfoa`
- `< created >`: this is the date on which the test was originally created, in year-month-day `YYYY-MM-DD` XSD date format
- `< classesTested >`: a list of the classes tested in the python framework, listed as `Entity.Class`, i.e. *Samplers.MonteCarlo*

- `< description >`: general notes about what work-flows or other methods are tested
- `< requirements >` (optional): lists the NQA requirement that this test satisfies
- `< analytic >` (optional): describes the analytic nature of this test and how it is documented in the analytic tests documentation

An additional node is optionally available to demonstrate significant revisions to a test:

```

<Simulation>
...
<TestInfo>
...
<revisions>
  <revision author='AuthorGitLabTag'
    date='YYYY-MM-DD'>paragraph description of
    revision</revision>
  <revision author='AuthorGitLabTag'
    date='YYYY-MM-DD'>paragraph description of
    revision</revision>
</revisions>
...
</TestInfo>
...
</Simulation>

```

The following sub-sections collect all the documented tests.

2.1 Requirement tests' description

This section contains the description of all the requirement tests.

2.1.1 PLUGINS FARM.RG PARAMETERIZED SIMO

This test can be found at “./raven/plugins/FARM/tests/test_RefGov_para_xmlABC.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/FARM.RG_parameterized_SIMO
```

or

```
./run_framework_tests --re=plugins/FARM.RG_parameterized_SIMO
```

- Test Description:
 - This is a test run of parameterized reference governor. It loads ABC matrices from external xml file and calculate the feedback from RefGov_parameterized_SIMO external model.
- Original Author:
 - HaoyuWang
- Creation date:
 - 2021-02-01
- The classes tested in this test are:
 - Models.ExternalModel.FARM
- This test fulfills the following requirement:
 - F-1

2.1.2 PLUGINS FARM.RG NOT PARAMETERIZED SIMO

This test can be found at “./raven/plugins/FARM/tests/test_RefGov_unpara_xmlABC.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/FARM.RG_not_parameterized_SIMO
```

or

```
./run_framework_tests --re=plugins/FARM.RG_not_parameterized_SIMO
```

- Test Description:
 - This is a test run of single reference governor. It loads ABC matrices from external xml file.
- Original Author:
 - HaoyuWang

- Creation date:
 - 2020-07-29
- The classes tested in this test are:
 - Models.ExternalModel.FARM
- This test fulfills the following requirement:
 - F-1

2.1.3 FRAMEWORK.TESTGRAPHMODEL

This test can be found at “./raven/plugins/SR2ML/tests/test_graphModel.xml”.
 This test can be called executing the following command:

```
./run_tests --re=framework.TestGraphModel
```

or

```
./run_framework_tests --re=framework.TestGraphModel
```

- Test Description:
 - This test is aimed to check the Graph Model
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-08
- The classes tested in this test are:
 - Models.ExternalModel.GraphModel
- This test fulfills the following requirement:
 - SR2ML-PRA-4
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : wangc
- date : 2019-11-27
- description: Added Plugin name extension

2.1.4 FRAMEWORK.TESTMARKOVMODEL 2STATES

This test can be found at “./raven/plugins/SR2ML/tests/test_markovModel_2states.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.TestMarkovModel_2states
```

or

```
./run_framework_tests --re=framework.TestMarkovModel_2states
```

- Test Description:
 - This test is aimed to check the Markov Model
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-08
- The classes tested in this test are:
 - Models.ExternalModel.MarkovModel
- This test fulfills the following requirement:
 - SR2ML-PRA-3
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-11-27
 - description: Added Plugin name extension

2.1.5 FRAMEWORK.TESTMARKOVMODEL 3STATES

This test can be found at “./raven/plugins/SR2ML/tests/test_markovModel_3states.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.TestMarkovModel_3states
```

or

```
./run_framework_tests --re=framework.TestMarkovModel_3states
```

- Test Description:
 - This test is aimed to check Markov model with 3 states
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-08
- The classes tested in this test are:
 - Models.ExternalModel.MarkovModel
- This test fulfills the following requirement:
 - SR2ML-F-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-11-27
 - description: Added Plugin name extension

2.1.6 FRAMEWORK.TESTETMODEL

This test can be found at “./raven/plugins/SR2ML/tests/test_ETmodel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.TestETModel
```

or

```
./run_framework_tests --re=framework.TestETModel
```

- Test Description:
 - This test is aimed to check the event tree external model
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-08
- The classes tested in this test are:
 - Models.ExternalModel.ETModel
- This test fulfills the following requirement:
 - SR2ML-PRA-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-11-27
 - description: Added Plugin name extension

2.1.7 FRAMEWORK.TESTFTMODEL

This test can be found at “./raven/plugins/SR2ML/tests/test_FTmodel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.TestFTModel
```

or

```
./run_framework_tests --re=framework.TestFTModel
```

- Test Description:

- This test is aimed to check fault tree external model
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-08
- The classes tested in this test are:
 - Models.ExternalModel.FTModel
- This test fulfills the following requirement:
 - SR2ML-PRA-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-11-27
 - description: Added Plugin name extension

2.1.8 FRAMEWORK.TESTGRAPHMODELTD

This test can be found at “./raven/plugins/SR2ML/tests/test_graphModel_TD.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.TestGraphModelTD
```

or

```
./run_framework_tests --re=framework.TestGraphModelTD
```

- Test Description:
 - This test is aimed to check the time dependent graph model
- Original Author:
 - mandd, wangc
- Creation date:

- 2019-05-08
- The classes tested in this test are:
 - Models.ExternalModel.GraphModel
- This test fulfills the following requirement:
 - SR2ML-PRA-4
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-11-27
 - description: Added Plugin name extension

2.1.9 FRAMEWORK.TESTFTMODELTD

This test can be found at “./raven/plugins/SR2ML/tests/test_FTmodel_TD.xml”.
 This test can be called executing the following command:

```
./run_tests --re=framework.TestFTModelTD
```

or

```
./run_framework_tests --re=framework.TestFTModelTD
```

- Test Description:
 - This test is aimed to check time dependent fault tree external model
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-08
- The classes tested in this test are:
 - Models.ExternalModel.FTModel
- This test fulfills the following requirement:

- SR2ML-PRA-2

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2019-11-27
- description: Added Plugin name extension

2.1.10 FRAMEWORK.TESTETMODELTD

This test can be found at “./raven/plugins/SR2ML/tests/test_ETmodel_TD.xml”.
This test can be called executing the following command:

```
./run_tests --re=framework.TestETModelTD
```

or

```
./run_framework_tests --re=framework.TestETModelTD
```

- Test Description:

- This test is aimed to check the fault tree external model

- Original Author:

- mandd, wangc

- Creation date:

- 2019-05-08

- The classes tested in this test are:

- Models.ExternalModel

- This test fulfills the following requirement:

- SR2ML-PRA-1

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2019-11-27
- description: Added Plugin name extension

2.1.11 FRAMEWORK.TESTENESEMBLEDISCRETE

This test can be found at “./raven/plugins/SR2ML/tests/test_ensemblePRAModel_discrete.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.TestEnsembleDiscrete
```

or

```
./run_framework_tests --re=framework.TestEnsembleDiscrete
```

- Test Description:
 - This test is aimed to check ensemble model with fault tree and event tree external model
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-08
- The classes tested in this test are:
 - Models.ExternalModel.EnsembleModel
- This test fulfills the following requirement:
 - SR2ML-F-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-11-27
 - description: Added Plugin name extension

2.1.12 FRAMEWORK.TESTENESEMBLEMIXED

This test can be found at “./raven/plugins/SR2ML/tests/test_ensemblePRAModel_mixed.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.TestEnesembleMixed
```

or

```
./run_framework_tests --re=framework.TestEnesembleMixed
```

- Test Description:
 - This test is aimed to check combined PRA external models
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-08
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - SR2ML-SI-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-11-27
 - description: Added Plugin name extension

2.1.13 PLUGINS SR2ML.RELIABILITYMODEL.EXPON

This test can be found at “./raven/plugins/SR2ML/tests/reliabilityModel/test_expon.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/SR2ML.reliabilityModel.expon
```


or

```
./run_framework_tests --re=plugins/SR2ML.reliabilityModel.expon
```

- Test Description:
 - This input tests reliability external model (i.e. exponential function) within SR2ML plugin
- Original Author:
 - wangc
- Creation date:
 - 2020-02-04
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-SR2ML-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2020-02-04
 - description: Add test

2.1.14 PLUGINS SR2ML.RELIABILITYMODEL.ERLANG

This test can be found at “./raven/plugins/SR2ML/tests/reliabilityModel/test_erlangian.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/SR2ML.reliabilityModel.erlang
```

or

```
./run_framework_tests --re=plugins/SR2ML.reliabilityModel.erlang
```

- Test Description:

- This input tests reliability external model (i.e. erlangian function) within SR2ML plugin
- Original Author:
 - wangc
- Creation date:
 - 2020-02-04
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-SR2ML-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2020-02-04
 - description: Add test

2.1.15 PLUGINS SR2ML.RELIABILITYMODEL.LOGNORM

This test can be found at “./raven/plugins/SR2ML/tests/reliabilityModel/test_lognorm.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/SR2ML.reliabilityModel.lognorm
```

or

```
./run_framework_tests --re=plugins/SR2ML.reliabilityModel.lognorm
```

- Test Description:
 - This input tests reliability external model (i.e. lognorm function) within SR2ML plugin
- Original Author:
 - wangc

- Creation date:
 - 2020-02-04
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-SR2ML-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2020-02-04
 - description: Add test

2.1.16 PLUGINS SR2ML.RELIABILITYMODEL.GAMMA

This test can be found at “./raven/plugins/SR2ML/tests/reliabilityModel/test_gamma.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/SR2ML.reliabilityModel.gamma
```

or

```
./run_framework_tests --re=plugins/SR2ML.reliabilityModel.gamma
```

- Test Description:
 - This input tests reliability external model (i.e. Gamma function) within SR2ML plugin
- Original Author:
 - wangc
- Creation date:
 - 2020-02-04
- The classes tested in this test are:
 - Models.ExternalModel

- This test fulfills the following requirement:
 - R-SR2ML-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2020-02-04
 - description: Add test

2.1.17 PLUGINS SR2ML.RELIABILITYMODEL.WEIBULL

This test can be found at “./raven/plugins/SR2ML/tests/reliabilityModel/test_weibull.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/SR2ML.reliabilityModel.weibull
```

or

```
./run_framework_tests --re=plugins/SR2ML.reliabilityModel.weibull
```

- Test Description:
 - This input tests reliability external model (i.e. Weibull function) within SR2ML plugin
- Original Author:
 - wangc
- Creation date:
 - 2020-02-04
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-SR2ML-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : wangc
- date : 2020-02-04
- description: Add test

2.1.18 PLUGINS SR2ML.RELIABILITYMODEL.BATHTUB

This test can be found at “./raven/plugins/SR2ML/tests/reliabilityModel/test_bathtub.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/SR2ML.reliabilityModel.bathtub
```

or

```
./run_framework_tests --re=plugins/SR2ML.reliabilityModel.bathtub
```

- Test Description:
 - This input tests reliability external model (i.e. bathtub function) within SR2ML plugin
- Original Author:
 - wangc
- Creation date:
 - 2020-02-04
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-SR2ML-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2020-02-04
 - description: Add test

2.1.19 PLUGINS SR2ML.RELIABILITYMODEL.FATIGUELIFE

This test can be found at “./raven/plugins/SR2ML/tests/reliabilityModel/test_fatiguelife.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/SR2ML.reliabilityModel.fatiguelife
```

or

```
./run_framework_tests --re=plugins/SR2ML.reliabilityModel.fatiguelife
```

- Test Description:
 - This input tests reliability external model (i.e. fatiguelife function) within SR2ML plugin
- Original Author:
 - wangc
- Creation date:
 - 2020-02-04
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-SR2ML-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2020-02-04
 - description: Add test

2.1.20 PLUGINS SR2ML.RELIABILITYMODEL.LOGLINEAR

This test can be found at “./raven/plugins/SR2ML/tests/reliabilityModel/test_loglinear.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/SR2ML.reliabilityModel.loglinear
```

or

```
./run_framework_tests --re=plugins/SR2ML.reliabilityModel.loglinear
```

- Test Description:
 - This input tests reliability external model (i.e. loglinear function) within SR2ML plugin
- Original Author:
 - wangc
- Creation date:
 - 2020-02-11
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-SR2ML-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2020-02-11
 - description: Add test

2.1.21 PLUGINS SR2ML.RELIABILITYMODEL.NORMAL

This test can be found at “./raven/plugins/SR2ML/tests/reliabilityModel/test_normal.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/SR2ML.reliabilityModel.normal
```

or

```
./run_framework_tests --re=plugins/SR2ML.reliabilityModel.normal
```

- Test Description:
 - This input tests reliability external model (i.e. norm function) within SR2ML plugin
- Original Author:
 - wangc
- Creation date:
 - 2020-02-04
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-SR2ML-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2020-02-04
 - description: Add test

2.1.22 PLUGINS SR2ML.RELIABILITYMODEL.POWERLAW

This test can be found at “./raven/plugins/SR2ML/tests/reliabilityModel/test_powerlaw.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/SR2ML.reliabilityModel.powerlaw
```

or

```
./run_framework_tests --re=plugins/SR2ML.reliabilityModel.powerlaw
```

- Test Description:

- This input tests reliability external model (i.e. powerlaw function) within SR2ML plugin
- Original Author:
 - wangc
- Creation date:
 - 2020-02-11
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-SR2ML-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2020-02-11
 - description: Add test

2.1.23 PLUGINS SR2ML.RELIABILITYMODEL.EXPONWEIBULL

This test can be found at “./raven/plugins/SR2ML/tests/reliabilityModel/test_exponweibull.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/SR2ML.reliabilityModel.exponweibull
```

or

```
./run_framework_tests --re=plugins/SR2ML.reliabilityModel.exponweibull
```

- Test Description:
 - This input tests reliability external model (i.e. exponweibull function) within SR2ML plugin
- Original Author:
 - wangc

- Creation date:
 - 2020-02-04
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-SR2ML-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2020-02-04
 - description: Add test

2.1.24 FRAMEWORK.SKP OPTIMIZATION

This test can be found at “./raven/plugins/LOGOS/tests/test_skp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.skp_optimization
```

or

```
./run_framework_tests --re=framework.skp_optimization
```

- Test Description:
 - This test is aimed to check the capital investment model for single knapsack problem
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-16
- The classes tested in this test are:
 - Models.ExternalModel.CapitalInvestmentModel

- This test fulfills the following requirement:
 - L-SDCBO-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-05-17
 - description: rename models to PyomoModels and utils to investment_utils
 2. revision info:
 - author : wangc
 - date : 2019-05-17
 - description: add raven CapitalInvestment external model test
 3. revision info:
 - author : wangc
 - date : 2019-05-17
 - description: fix import issue for raven plugins
 4. revision info:
 - author : wangc
 - date : 2019-05-20
 - description: Dump PyomoModel’s outputs into raven data objects

2.1.25 FRAMEWORK.MCKP OPTIMIZATION

This test can be found at “./raven/plugins/LOGOS/tests/test_mckp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.mckp_optimization
```

or

```
./run_framework_tests --re=framework.mckp_optimization
```

- Test Description:
 - This test is aimed to check the capital investment model for multi-choice knapsack problem

- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-20
- The classes tested in this test are:
 - Models.ExternalModel.CapitalInvestmentModel
- This test fulfills the following requirement:
 - L-SDCBO-3
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-05-20
 - description: update test_mckp
 2. revision info:
 - author : wangc
 - date : 2019-05-20
 - description: change variable names, this is because RAVEN External model currently can only store variables that follow the python variable rules, I think this should be changed

2.1.26 FRAMEWORK.MKP OPTIMIZATION

This test can be found at “./raven/plugins/LOGOS/tests/test_mkp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.mkp_optimization
```

or

```
./run_framework_tests --re=framework.mkp_optimization
```

- Test Description:
 - This test is aimed to check the capital investment model for multiple knapsacks problem

- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-20
- The classes tested in this test are:
 - Models.ExternalModel.CapitalInvestmentModel
- This test fulfills the following requirement:
 - L-SDCBO-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-05-20
 - description: debug
 2. revision info:
 - author : wangc
 - date : 2019-05-20
 - description: fix

2.1.27 LOGOS.LOGOS MCKP

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/mckp/test_mckp.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_mckp
```

or

```
./run_framework_tests --re=Logos.logos_mckp
```

- Test Description:
 - This test is aimed to check logos_mckp
- Original Author:

- wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP
- This test fulfills the following requirement:
 - L-DCBO-3

2.1.28 LOGOS.LOGOS MCKP SCENARIO

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/mckp/test_mckp_scenario.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_mckp_scenario
```

or

```
./run_framework_tests --re=Logos.logos_mckp_scenario
```

- Test Description:
 - This test is aimed to check logos_mckp_scenario
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP
- This test fulfills the following requirement:
 - L-SCBO-3

2.1.29 LOGOS.LOGOS SKP

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/skp/test_skp.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_skp
```

or

```
./run_framework_tests --re=Logos.logos_skp
```

- Test Description:
 - This test is aimed to check logos_skp
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - SingleKnapsack
- This test fulfills the following requirement:
 - L-DCBO-1

2.1.30 LOGOS.LOGOS BKP

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/skp/test_bkp.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_bkp
```

or

```
./run_framework_tests --re=Logos.logos_bkp
```

- Test Description:

- This test is aimed to check logos_bkp
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - SingleKnapsack
- This test fulfills the following requirement:
 - L-DCBO-1

2.1.31 LOGOS.LOGOS DKP

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/skp/test_dkp.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_dkp
```

or

```
./run_framework_tests --re=Logos.logos_dkp
```

- Test Description:
 - This test is aimed to check logos_dkp
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - SingleKnapsack
- This test fulfills the following requirement:
 - L-DCBO-1

2.1.32 LOGOS.LOGOS SKP MULTI VARIATION

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/skp/test_multi_variation.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_skp_multi_variation
```

or

```
./run_framework_tests --re=Logos.logos_skp_multi_variation
```

- Test Description:
 - This test is aimed to check logos_skp_multi_variation
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - SingleKnapsack
- This test fulfills the following requirement:
 - L-SCBO-1

2.1.33 LOGOS.LOGOS SKP VARIATION

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/skp/test_variation.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_skp_variation
```

or

```
./run_framework_tests --re=Logos.logos_skp_variation
```

- Test Description:

- This test is aimed to check logos_skp_variation
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - SingleKnapsack
- This test fulfills the following requirement:
 - L-SCBO-1

2.1.34 CAPITALINVESTMENTS DRO.TEST DROMCKP SCENARIO

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_dromckp_scenario.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_dromckp_scenario
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_dromckp_scenario
```

- Test Description:
 - This test is aimed to check distributional robust optimization. In this case, radius_ambiguity is setted to zero, the test is equivalent to the stochastic optimization MCKP test.
- Original Author:
 - wangc
- Creation date:
 - 2020-04-29
- The classes tested in this test are:
 - DROMCKP

- This test fulfills the following requirement:
 - L-DRO-3

2.1.35 CAPITALINVESTMENTS DRO.TEST DROSKP SCENARIO

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_droskp_scenario.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_droskp_scenario
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_droskp_scenario
```

- Test Description:
 - This test is aimed to check the distributionally robust optimization for Single Knapsack Problem, we only consider capital budget. In this test, radius_ambiguity = 0.0, and this test is equivalent to the stochastic optimization problem.
- Original Author:
 - wangc
- Creation date:
 - 2020-04-30
- The classes tested in this test are:
 - DROSKP
- This test fulfills the following requirement:
 - L-DRO-1

2.1.36 CAPITALINVESTMENTS DRO.TEST DROMKP SCENARIO

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_dromkp_scenarios.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_dromkp_scenario
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_dromkp_scenario
```

- Test Description:
 - This test is aimed to check the distributionally robust optimization for Multiple Knapsack Problem, we only consider capital budget. In this test, $\text{radius_ambiguity} = 0.0$, which is equivalent to the stochastic programming
- Original Author:
 - wangc
- Creation date:
 - 2020-04-30
- The classes tested in this test are:
 - DROMKP
- This test fulfills the following requirement:
 - L-DRO-2

2.1.37 CAPITALINVESTMENTS CVAR.TEST CVAR MCKP SCENARIO

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/cvar/test_cvar_mckp_scenario.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/cvar.test_cvar_mckp_scenario
```

or

```
./run_framework_tests --re=CapitalInvestments/cvar.test_cvar_mckp_scenario
```

- Test Description:

- This test is aimed to check the CVaR optimization for In this test, risk_aversion = 0.0, confidence_level = 0.95, the test is equivalent to the stochastic optimization MCKP test.
- Original Author:
 - wangc
- Creation date:
 - 2020-07-09
- The classes tested in this test are:
 - CVaRMCKP
- This test fulfills the following requirement:
 - L-CVaR-3

2.1.38 CAPITALINVESTMENTS CVAR.TEST CVAR SKP SCENARIO

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/cvar/test_cvar_skp_scenario.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/cvar.test_cvar_skp_scenario
```

or

```
./run_framework_tests --re=CapitalInvestments/cvar.test_cvar_skp_scenario
```

- Test Description:
 - This test is aimed to check the CVaR optimization for Single Knapsack Problem, we only consider capital budget. In this test, risk_aversion = 0.0, and this test is equivalent to the stochastic optimization problem.
- Original Author:
 - wangc
- Creation date:
 - 2020-07-09

- The classes tested in this test are:
 - CVaRSKP
- This test fulfills the following requirement:
 - L-CVaR-1

2.1.39 CAPITALINVESTMENTS CVAR.TEST CVAR MKP SCENARIO

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/cvar/test_cvar_mkp_scenarios.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/cvar.test_cvar_mkp_scenario
```

or

```
./run_framework_tests --re=CapitalInvestments/cvar.test_cvar_mkp_scenario
```

- Test Description:
 - This test is aimed to check the CVaR optimization for Multiple Knapsack Problem, we only consider capital budget. In this test, risk_aversion = 0.0, which is equivalent to the stochastic programming
- Original Author:
 - wangc
- Creation date:
 - 2020-07-09
- The classes tested in this test are:
 - CVaRMKP
- This test fulfills the following requirement:
 - L-CVaR-2

2.1.40 LOGOS.LOGOS MKP

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/mkp/test_mkp.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_mkp
```

or

```
./run_framework_tests --re=Logos.logos_mkp
```

- Test Description:
 - This test is aimed to check logos_mkp
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MultipleKnapsack
- This test fulfills the following requirement:
 - L-DCBO-2

2.1.41 LOGOS.LOGOS MKP SCENARIOS

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/mkp/test_mkp_scenarios.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_mkp_scenarios
```

or

```
./run_framework_tests --re=Logos.logos_mkp_scenarios
```

- Test Description:

- This test is aimed to check logos_mkp_scenarios
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MultipleKnapsack
- This test fulfills the following requirement:
 - L-SCBO-2

2.1.42 LOGOS.LOGOS MKP WEING

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/mkp/test_mkp_weing.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_mkp_weing
```

or

```
./run_framework_tests --re=Logos.logos_mkp_weing
```

- Test Description:
 - This test is aimed to check logos_mkp_weing
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MultipleKnapsack
- This test fulfills the following requirement:
 - L-DCBO-2

2.1.43 LOGOS.LOGOS EXAMPLES USE CASE 3B FY19 CONSISTENT CONSTRAINT I II

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_3b_fy19_consistent_constraint_I_II.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_3b_fy19_consistent_constraint_I_II
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_3b_fy19_consistent_constraint_I_II
```

- Test Description:
 - This test is aimed to check `logos_examples_use_case_3b_fy19_consistent_constraint_I_II`
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP
- This test fulfills the following requirement:
 - L-F-2

2.1.44 LOGOS.TESTS.MILESTONETESTSSEPTFY19.USE CASE III.CAPITAL BUDGETING III

This test can be found at “./raven/plugins/LOGOS/tests/MilestoneTestsSeptFY19/use_case_III/raven_capital_budgeting_III.xml”. This test can be called executing the following command:

```
./run_tests --re=LOGOS.tests.MilestoneTestsSeptFY19.use_case_III.raven_capital_budgeting_III
```

or

```
./run_framework_tests --re=LOGOS.tests.MilestoneTestsSeptFY19.use_case_III
```

- Test Description:
 - This test is aimed to check the capital investment model for FY19 use case analysis
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-12-03
- The classes tested in this test are:
 - Models.ExternalModel.CapitalInvestmentModel
- This test fulfills the following requirement:
 - L-F-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2020-03-12
 - description: update tests and import module lists
 2. revision info:
 - author : wangc
 - date : 2019-06-04
 - description: change regulatorymandated to mandatory

2.1.45 PLUGINS EXAMPLEPLUGIN.TESTPLUGINEXAMPLE

This test can be found at “./raven/plugins/ExamplePlugin/tests/test_example_plugin.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/ExamplePlugin.TestPluginExample
```

or

```
./run_framework_tests --re=plugins/ExamplePlugin.TestPluginExample
```

- Test Description:
 - This input tests an example of external developed plugin. In this case it is just a plugin that computes a sum of exponentials: $X_i(t) = \sum_{i=1}^n coef_i * e^{var_i * t}$
- Original Author:
 - alfoa
- Creation date:
 - 2017-11-17
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-SI-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-10-01
 - description: This is a requirement test now.

2.1.46 PLUGINS EXAMPLEPLUGIN.TESTPLUGINEXAMPLE

This test can be found at “./raven/plugins/ExamplePlugin/tests/test_raven_running_raven_plugin.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/ExamplePlugin.TestPluginExample
```

or

```
./run_framework_tests --re=plugins/ExamplePlugin.TestPluginExample
```

- Test Description:

- This test is aimed to check the functionality of the RAVEN code interface (RAVEN running RAVEN) executing an external plugin (ExternalModel) plugin
- Original Author:
 - alfoa
- Creation date:
 - 2017-11-17
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-SI-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-10-01
 - description: This is a requirement test now.
 2. revision info:
 - author : alfoa
 - date : 2019-06-05
 - description: Removed HDF5 dumping in order to reduce overhead of IO on HPC slow systems. In addition, it invokes python directly to remove a bit of overhead for establishing conda

2.1.47 MULTIMARKETFIXEDPRICE

This test can be found at “./raven/plugins/HERON/tests/integration_tests/mechanics/multimarket_fix_price/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=MultiMarketFixedPrice
```

or

```
./run_framework_tests --re=MultiMarketFixedPrice
```

- Test Description:
 - Tests HERON creating workflows and running with a fixed deregulated market price.
- Original Author:
 - gaira
- Creation date:
 - 2019-12-12
- The classes tested in this test are:
 - HERON
- This test fulfills the following requirement:
 - H-EA-3

2.1.48 VARDEMANDVARPRICE

This test can be found at “./raven/plugins/HERON/tests/integration_tests/mechanics/var_demand_var_price/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=VarDemandVarPrice
```

or

```
./run_framework_tests --re=VarDemandVarPrice
```

- Test Description:
 - Tests HERON for a variable demand and variable price.
- Original Author:
 - gaira
- Creation date:
 - 2019-12-12
- The classes tested in this test are:

- HERON
- This test fulfills the following requirement:
 - H-EA-2

2.1.49 VARDEMANDFIXEDPRICE

This test can be found at “./raven/plugins/HERON/tests/integration_tests/mechanics/var_demand_fix_price/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=VarDemandFixedPrice
```

or

```
./run_framework_tests --re=VarDemandFixedPrice
```

- Test Description:
 - Tests HERON creating workflows and running with a variable demand but fixed market price.
- Original Author:
 - gaira
- Creation date:
 - 2019-12-12
- The classes tested in this test are:
 - HERON
- This test fulfills the following requirement:
 - H-F-1
 - H-F-2
 - H-EA-1
 - H-SI-1

2.1.50 CASHFLOW TEST PI

This test can be found at “./raven/plugins/TEAL/tests/CashFlow_test_PI.xml”.

This test can be called executing the following command:

```
./run_tests --re=CashFlow_test_PI
```

or

```
./run_framework_tests --re=CashFlow_test_PI
```

- Test Description:
 - This input tests the RAVEN plugin TEAL. The tested functionality is called PI.
- Original Author:
 - A. Epiney
- Creation date:
 - 2017-10-25
- The classes tested in this test are:
 - Models.ExternalModel.TEAL
- This test fulfills the following requirement:
 - CF-F-1
 - CF-F-2
 - CF-EA-3
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-12-13
 - description: Added classTested node
 2. revision info:
 - author : alfoa
 - date : 2019-07-30
 - description: Added requirements

3. revision info:

- author : wangc
- date : 2019-11-08
- description: update ExternalXML with new structure cash flow input

4. revision info:

- author : alfoa
- date : 2019-11-25
- description: Added Plugin name extension

5. revision info:

- author : alfoa
- date : 2020-07-28
- description: Modified name from CashFlow to TEAL

2.1.51 CASHFLOW TEST NPV

This test can be found at “./raven/plugins/TEAL/tests/CashFlow_test_NPV.xml”.

This test can be called executing the following command:

```
./run_tests --re=CashFlow_test_NPV
```

or

```
./run_framework_tests --re=CashFlow_test_NPV
```

- Test Description:
 - This input tests the RAVEN plugin TEAL. The tested functionality is called NPV.
- Original Author:
 - A. Epiney
- Creation date:
 - 2017-10-25
- The classes tested in this test are:
 - Models.ExternalModel.TEAL
- This test fulfills the following requirement:

- CF-F-1
 - CF-F-2
 - CF-EA-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-12-13
 - description: Added classTested node
 2. revision info:
 - author : alfoa
 - date : 2019-07-30
 - description: Added requirements
 3. revision info:
 - author : wangc
 - date : 2019-11-08
 - description: update ExternalXML with new structure cash flow input
 4. revision info:
 - author : alfoa
 - date : 2019-11-25
 - description: Added Plugin name extension
 5. revision info:
 - author : alfoa
 - date : 2020-07-28
 - description: Modified name from CashFlow to TEAL

2.1.52 CASHFLOW TEST NPVSEARCH

This test can be found at “./raven/plugins/TEAL/tests/CashFlow_test_NPVsearch.xml”. This test can be called executing the following command:

```
./run_tests --re=CashFlow_test_NPVsearch
```

or

```
./run_framework_tests --re=CashFlow_test_NPVsearch
```

- Test Description:
 - This input tests the RAVEN plugin TEAL. The tested functionality is called NPV search.
- Original Author:
 - A. Epiney
- Creation date:
 - 2017-10-25
- The classes tested in this test are:
 - Models.ExternalModel.TEAL
- This test fulfills the following requirement:
 - CF-EA-4
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-12-13
 - description: Added classTested node
 2. revision info:
 - author : alfoa
 - date : 2019-07-30
 - description: Added requirements
 3. revision info:
 - author : wangc
 - date : 2019-11-08
 - description: update ExternalXML with new structure cash flow input
 4. revision info:
 - author : alfoa
 - date : 2019-11-25
 - description: Added Plugin name extension
 5. revision info:
 - author : alfoa
 - date : 2020-07-28
 - description: Modified name from CashFlow to TEAL

2.1.53 CASHFLOW TEST IRR

This test can be found at “./raven/plugins/TEAL/tests/CashFlow_test_IRR.xml”.

This test can be called executing the following command:

```
./run_tests --re=CashFlow_test_IRR
```

or

```
./run_framework_tests --re=CashFlow_test_IRR
```

- Test Description:
 - This input tests the RAVEN plugin TEAL. The tested functionality is called IRR.
- Original Author:
 - A. Epiney
- Creation date:
 - 2017-10-25
- The classes tested in this test are:
 - Models.ExternalModel.TEAL
- This test fulfills the following requirement:
 - CF-F-1
 - CF-F-2
 - CF-EA-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-12-13
 - description: Added classTested node
 2. revision info:
 - author : alfoa
 - date : 2019-07-30
 - description: Added requirements

3. revision info:

- author : wangc
- date : 2019-11-08
- description: update ExternalXML with new structure cash flow input

4. revision info:

- author : alfoa
- date : 2019-11-25
- description: Added Plugin name extension

5. revision info:

- author : alfoa
- date : 2020-07-28
- description: Modified name from CashFlow to TEAL

2.1.54 CASHFLOW TEST NPV MULTIPLY

This test can be found at “./raven/plugins/TEAL/tests/CashFlow_test_NPV_multiplier.xml”. This test can be called executing the following command:

```
./run_tests --re=CashFlow_test_NPV_multiply
```

or

```
./run_framework_tests --re=CashFlow_test_NPV_multiply
```

- Test Description:
 - This input tests the RAVEN plugin TEAL. The tested functionality is called NPV. This test uses the ”Multiplier” functionality of CashFlow.
- Original Author:
 - A. Epiney
- Creation date:
 - 2018-03-22
- The classes tested in this test are:
 - Models.ExternalModel.TEAL

- This test fulfills the following requirement:
 - CF-EA-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-12-13
 - description: Added classTested node
 2. revision info:
 - author : alfoa
 - date : 2019-07-30
 - description: Added requirements
 3. revision info:
 - author : wangc
 - date : 2019-11-08
 - description: update ExternalXML with new structure cash flow input
 4. revision info:
 - author : alfoa
 - date : 2019-11-25
 - description: Added Plugin name extension
 5. revision info:
 - author : alfoa
 - date : 2020-07-28
 - description: Modified name from CashFlow to TEAL

2.1.55 CASHFLOW TEST NPV

This test can be found at “. /raven/plugins/TEAL/tests/CashFlow_test_NPV_expandedDriver.xml”. This test can be called executing the following command:

```
./run_tests --re=CashFlow_test_NPV
```

or

```
./run_framework_tests --re=CashFlow_test_NPV
```

- Test Description:
 - This input tests the RAVEN plugin CashFlow. The tested functionality is called NPV. The BOP revenue is an expanded driver, i.e. values for every year are provided instead of just one value that is repeated for all years.
- Original Author:
 - A. Epiney
- Creation date:
 - 2018-03-23
- The classes tested in this test are:
 - Models.ExternalModel.TEAL
- This test fulfills the following requirement:
 - CF-EA-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-12-13
 - description: Added classTested node
 2. revision info:
 - author : alfoa
 - date : 2019-07-30
 - description: Added requirements
 3. revision info:
 - author : wangc
 - date : 2019-11-08
 - description: update ExternalXML with new structure cash flow input
 4. revision info:
 - author : alfoa
 - date : 2019-11-25
 - description: Added Plugin name extension
 5. revision info:
 - author : alfoa
 - date : 2020-07-28
 - description: Modified name from CashFlow to TEAL

2.1.56 CASHFLOW TEST NPV

This test can be found at “./raven/plugins/TEAL/tests/CashFlow_test_NPV_componentTax.xml”. This test can be called executing the following command:

```
./run_tests --re=CashFlow_test_NPV
```

or

```
./run_framework_tests --re=CashFlow_test_NPV
```

- Test Description:
 - This input tests the RAVEN plugin TEAL. The tested functionality is called NPV. The functionality of different tax and inflation rates for different components is tested here.
- Original Author:
 - A. Epiney
- Creation date:
 - 2018-03-23
- The classes tested in this test are:
 - Models.ExternalModel.TEAL
- This test fulfills the following requirement:
 - CF-EA-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-12-13
 - description: Added classTested node
 2. revision info:
 - author : alfoa
 - date : 2019-07-30
 - description: Added requirements
 3. revision info:

- author : wangc
- date : 2019-11-08
- description: update ExternalXML with new structure cash flow input

4. revision info:

- author : alfoa
- date : 2019-11-25
- description: Added Plugin name extension

5. revision info:

- author : alfoa
- date : 2020-07-28
- description: Modified name from CashFlow to TEAL

2.1.57 CASHFLOW TEST PI

This test can be found at “./raven/plugins/TEAL/tests/CashFlow_test_NPV_RunAsCode.py”. This test can be called executing the following command:

```
./run_tests --re=CashFlow_test_PI
```

or

```
./run_framework_tests --re=CashFlow_test_PI
```

- Test Description:
 - # This input tests the RAVEN plugin CashFlow in standalone mode. #
- Original Author:
 - A. Epiney
- Creation date:
 - 2017-10-25
- The classes tested in this test are:
 - Models.ExternalModel.CashFlow
- This test fulfills the following requirement:
 - CF-EA-5

- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2019-11-25
 - description: Added classTested node

2.1.58 CASHFLOW TEST NPV

This test can be found at “./raven/plugins/TEAL/tests/CashFlow_test_NPV_customTime.xml”. This test can be called executing the following command:

```
./run_tests --re=CashFlow_test_NPV
```

or

```
./run_framework_tests --re=CashFlow_test_NPV
```

- Test Description:
 - This input tests the RAVEN plugin CashFlow. The tested functionality is called NPV. Tests the ProjectTime, StartTime and Repetition functionalities. All sub-projects, i.e. components lifetimes (including repetition) finish before the ProjectTime finishes.
- Original Author:
 - A. Epiney
- Creation date:
 - 2018-04-06
- The classes tested in this test are:
 - Models.ExternalModel.TEAL
- This test fulfills the following requirement:
 - CF-EA-1
 - CF-SI-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : alfoa
 - date : 2018-12-13
 - description: Added classTested node
2. revision info:
- author : alfoa
 - date : 2019-07-30
 - description: Added requirements
3. revision info:
- author : wangc
 - date : 2019-11-08
 - description: update ExternalXML with new structure cash flow input
4. revision info:
- author : alfoa
 - date : 2019-11-25
 - description: Added Plugin name extension
5. revision info:
- author : alfoa
 - date : 2020-07-28
 - description: Modified name from CashFlow to TEAL

2.1.59 CASHFLOW TEST NPV

This test can be found at “./raven/plugins/TEAL/tests/CashFlow_test_NPV_customTime2.xml”. This test can be called executing the following command:

```
./run_tests --re=CashFlow_test_NPV
```

or

```
./run_framework_tests --re=CashFlow_test_NPV
```

- Test Description:
 - This input tests the RAVEN plugin TEAL. The tested functionality is called NPV. Tests the ProjectTime, StartTime and Repetition functionalities. No sub-project, i.e. component lifetime (including repetition) finish before the ProjectTime finishes.
- Original Author:

- A. Epiney
- Creation date:
 - 2018-04-06
- The classes tested in this test are:
 - Models.ExternalModel.CashFlow
- This test fulfills the following requirement:
 - CF-EA-1
 - CF-IS-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-12-13
 - description: Added classTested node
 2. revision info:
 - author : alfoa
 - date : 2019-07-30
 - description: Added requirements
 3. revision info:
 - author : wangc
 - date : 2019-11-08
 - description: update ExternalXML with new structure cash flow input
 4. revision info:
 - author : alfoa
 - date : 2019-11-25
 - description: Added Plugin name extension
 5. revision info:
 - author : alfoa
 - date : 2020-07-28
 - description: Modified name from CashFlow to TEAL

2.1.60 CASHFLOW TEST NPV CUSTOM MACRS

This test can be found at “./raven/plugins/TEAL/tests/CashFlow_test_NPV_custom_MACRS.xml”. This test can be called executing the following command:

```
./run_tests --re=CashFlow_test_NPV_custom_MACRS
```

or

```
./run_framework_tests --re=CashFlow_test_NPV_custom_MACRS
```

- Test Description:
 - This input tests the RAVEN plugin CashFlow. The tested functionality is called NPV with custom macrs.
- Original Author:
 - wangc
- Creation date:
 - 2019-11-08
- The classes tested in this test are:
 - Models.ExternalModel.TEAL
- This test fulfills the following requirement:
 - CF-EA-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2019-11-25
 - description: Added Plugin name extension
 2. revision info:
 - author : alfoa
 - date : 2019-11-25
 - description: Added requirements
 3. revision info:
 - author : alfoa
 - date : 2020-07-28
 - description: Modified name from CashFlow to TEAL

2.1.61 CASHFLOW TEST NPV REPETITIONS

This test can be found at “./raven/plugins/TEAL/tests/CashFlow_test_repetitions.xml”. This test can be called executing the following command:

```
./run_tests --re=CashFlow_test_NPV_repetitions
```

or

```
./run_framework_tests --re=CashFlow_test_NPV_repetitions
```

- Test Description:
 - This input finds the differential NPV between Li-ion batteries and other hydrogen production technologies. This test is showing the usage of periodic (repetition) Operation and Maintenance cashflows for components. This test is aimed to show that the issue #20 (<https://github.com/idaholab/TEAL/issues/20>) is resolved.
- Original Author:
 - alfoa
- Creation date:
 - 2020-10-20
- The classes tested in this test are:
 - Models.ExternalModel.TEAL
- This test fulfills the following requirement:
 - CF-F-1
 - CF-F-2
 - CF-EA-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2021-01-28
 - description: Added test for checking issue #20 is resolved

2.1.62 FRAMEWORK.TEST OUTPUT

This test can be found at “./raven/tests/framework/test_output.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.test_output
```

or

```
./run_framework_tests --re=framework.test_output
```

- Test Description:
 - This test is aimed to check the OutStreams system in RAVEN (BOTH TYPE: Plot (all available plot types) and Print(all the available combination of options))
- Original Author:
 - coglj
- Creation date:
 - 2013-09-24
- The classes tested in this test are:
 - OutStreams.Plot, OutStreams.Print
- This test fulfills the following requirement:
 - R-RA-3
 - R-F-5
 - R-F-6
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : crsr
 - date : 2014-04-03
 - description: new input stile for the rom and the dummy. SVN r26236
 2. revision info:
 - author : alfoa
 - date : 2014-04-10

- description: Interactive mode for Steps + moved exec on the fly outside the modules in order to avoid unneeded slowing down. SVN r26340
3. revision info:
 - author : senrs
 - date : 2015-03-17
 - description: Scatter plot corrected
 4. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 5. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
 6. revision info:
 - author : maljdan
 - date : 2015-06-22
 - description: Adding the outstream manager to the XSD and adjusting some of the input files to play nicely with it.
 7. revision info:
 - author : senrs
 - date : 2015-07-08
 - description: Adding subPlot capability
 8. revision info:
 - author : cogljj
 - date : 2015-10-08
 - description: Switching from RAVEN model to external model, so RELAP-7 not needed. This is checking raven's output, so it shouldn't depend on RELAP-7. This removes the raven c++ input files. This updates gold files because of changing the model.
 9. revision info:
 - author : maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History.
 10. revision info:

- author : alfoa
- date : 2016-09-01
- description: Close #650

11. revision info:

- author : cogljj
- date : 2016-10-07
- description: Having both a color and a colormap doesn't make sense.

12. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.1.63 FRAMEWORK.TEST ROM TRAINER

This test can be found at “./raven/tests/framework/test_rom_trainer.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.test_rom_trainer
```

or

```
./run_framework_tests --re=framework.test_rom_trainer
```

- Test Description:
 - This test is aimed to test the capability of RAVEN to train ROMs based on the data sets constructed by whatever sampling strategy
- Original Author:
 - alfoa
- Creation date:
 - 2013-09-26
- The classes tested in this test are:
 - Steps.RomTrainer, Models.ROM
- This test fulfills the following requirement:

- R-RA-4
 - R-F-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2014-03-06
 - description: changed name of DataBase handling, modified all tests were using it, improved Step output handling etc r25347
 2. revision info:
 - author : alfoa
 - date : 2014-07-15
 - description: 2) eliminated redundancy type for distribution specification in samplers... all inputs and tests found in repository have been modified as well r28610
 3. revision info:
 - author : cogljj
 - date : 2014-10-06
 - description: Renaming blocks with IODataBase and OutStreamStep to IOStep. The two different steps were combined. r29902
 4. revision info:
 - author : alfoa
 - date : 2014-10-22
 - description: added variable sampling MC for RAVEN code interface + eliminated need to specify variable type for Functions and ExternalModels r30198
 5. revision info:
 - author : alfoa
 - date : 2015-05-19
 - description: Closes #171
 6. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
 7. revision info:
 - author : alfoa
 - date : 2015-09-12

- description: removed syntax inconsistency with respect standards for Samplers (underscores instead of camelBack) + created conversion script

8. revision info:

- author : cogljj
- date : 2015-10-12
- description: Moving test_rom_trainer to test_rom_trainer_raven.

9. revision info:

- author : cogljj
- date : 2015-10-12
- description: Made a test rom trainer with an external model.

10. revision info:

- author : cogljj
- date : 2015-11-17
- description: Updating to work with scikit-learn 0.17. In the new version of sklearn the rom can not use a classifier anymore.

11. revision info:

- author : maljdan
- date : 2016-05-20
- description: Updating the test cases to remove references to Point or History.

12. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.1.64 FRAMEWORK.TESTGRID

This test can be found at “./raven/tests/framework/test_Grid_Sampler.xml”.
This test can be called executing the following command:

```
./run_tests --re=framework.testGrid
```

or

```
./run_framework_tests --re=framework.testGrid
```

- Test Description:

- This test is aimed to check the capability in RAVEN to employ a Grid sampling strategy. Since the goal of the test is to testify that the Grid sampling strategy is functional, a Dummy model is used.
- Original Author:
 - crisr
- Creation date:
 - 2013-10-15
- The classes tested in this test are:
 - Sampler.Grid
- This test fulfills the following requirement:
 - R-RE-3
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 2. revision info:
 - author : talbpaul
 - date : 2015-05-06
 - description: improved verbosity in tests and manual
 3. revision info:
 - author : alfoa
 - date : 2015-05-18
 - description: Closes #167
 4. revision info:
 - author : alfoa
 - date : 2015-05-18
 - description: Closes #169
 5. revision info:
 - author : alfoa
 - date : 2015-05-26

- description: grid done
- 6. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
- 7. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
- 8. revision info:
 - author : talbpaul
 - date : 2016-04-26
 - description: added check for pre-existing backup files when validating
- 9. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
- 10. revision info:
 - author : alfoa
 - date : 2019-06-05
 - description: Modified grid to test resolution of issue #1003

2.1.65 FRAMEWORK.TESTRANDOM

This test can be found at “./raven/tests/framework/test_random.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.testRandom
```

or

```
./run_framework_tests --re=framework.testRandom
```

- Test Description:
 - This test is aimed to check the functionality of RAVEN to perform random sampling (MonteCarlo) on simple 1Dimensional distributions. Since the goal of the test is to check the Sampler only, a Dummy Model is used.

- Original Author:
 - coglj
- Creation date:
 - 2014-02-18
- The classes tested in this test are:
 - Samplers.MonteCarlo
- This test fulfills the following requirement:
 - R-F-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 2. revision info:
 - author : alfoa
 - date : 2015-05-18
 - description: Closes #169
 3. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.1.66 FRAMEWORK.TESTEXTERNALMODEL

This test can be found at “./raven/tests/framework/test_Lorentz.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.testExternalModel
```

or

```
./run_framework_tests --re=framework.testExternalModel
```

- Test Description:
 - This test is aimed to check the functionality of RAVEN to use ExternalModel entities.
- Original Author:
 - mandd
- Creation date:
 - 2013-10-24
- The classes tested in this test are:
 - Models.ExternalModel
- This test fulfills the following requirement:
 - R-IS-4
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 2. revision info:
 - author : alfoa
 - date : 2015-04-21
 - description: Closes #122
 3. revision info:
 - author : cogljj

- date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
4. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
5. revision info:
- author : talbpaul
 - date : 2018-02-26
 - description: Adding maxQueueSize of 1 for consistency with previous behavior

2.1.67 FRAMEWORK.TEST IOSTEP LOAD

This test can be found at “./raven/tests/framework/test_iostep_load.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.test_iostep_load
```

or

```
./run_framework_tests --re=framework.test_iostep_load
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to perform IO operation on its own object. This case checks the capability to create DataObjects from a folder containing CSVs and to dump them into HDF5 (and viceversa)
- Original Author:
 - cogljj
- Creation date:
 - 2014-09-29
- The classes tested in this test are:
 - Steps.IOSStep, DataObjects.PointSet, DataObjects.HistorySet, Databases.HDF5
- This test fulfills the following requirement:

- R-RA-2
- R-F-6
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2014-10-06
 - description: Renaming blocks with IODataBase and OutStreamStep to IOStep. The two different steps were combined. SVN r29902
 2. revision info:
 - author : cogljj
 - date : 2014-10-08
 - description: Modify input to use its own unique database. SVN r29924
 3. revision info:
 - author : cogljj
 - date : 2015-02-27
 - description: Adding documentation to the manual about relative working directory. Also changing one of tests to do this.
 4. revision info:
 - author : alfoa
 - date : 2015-03-04
 - description: Modified batch sizes because sometimes, if we run the tests in parallel, the order of values in csv can be different
 5. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 6. revision info:
 - author : cogljj
 - date : 2015-04-23
 - description: Switching to relative directories for working directory and database directory. Switching to default to relative to the xml file, not relative to the run dir. Passing the run info to the DataBases so that the working directory is known.
 7. revision info:
 - author : maljdan
 - date : 2015-06-16

- description: Fixing the input files to pass the validation
8. revision info:
- author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
9. revision info:
- author : talbpaul
 - date : 2015-07-07
 - description: updated to restrict partial-node comments
10. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
11. revision info:
- author : maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History.
12. revision info:
- author : maljdan
 - date : 2016-06-27
 - description: Adjusting the inputs and outputs of two test cases to match what the loaded files read.
13. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.1.68 FRAMEWORK.ND EXTERNAL MC

This test can be found at “. /raven/tests/framework/test_simple_ND_external_MC.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.ND_external_MC
```

or

```
./run_framework_tests --re=framework.ND_external_MC
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to handle ND (custom) probability density functions (distributions), when a MonteCarlo sampling strategy is performed.
- Original Author:
 - mandd
- Creation date:
 - 2015-03-04
- The classes tested in this test are:
 - Distributions.NDInverseWeight, Distributions.NDCartesianSpline, Samplers.MonteCarlo
- This test fulfills the following requirement:
 - R-RE-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 2. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
 3. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.

5. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.1.69 FRAMEWORK CALCULATE AND TRANSFER

This test can be found at “./raven/tests/framework/test_calc_and_transfer.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/calculate_and_transfer
```

or

```
./run_framework_tests --re=framework/calculate_and_transfer
```

- Test Description:
 - Creates data with an external model, then creates a rom from that, and then compares the data generated by both with the ComparisonStatistics class.
- Original Author:
 - coglj
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - ComparisonStatistics,IOStep
- This test fulfills the following requirement:
 - R-IS-5

2.1.70 FRAMEWORK DATABASES HDF5.2STEPS SAME DB

This test can be found at “./raven/tests/framework/Databases/HDF5/test_2steps_same_db.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Databases/HDF5.2steps_same_db
```

or

```
./run_framework_tests --re=framework/Databases/HDF5.2steps_same_db
```

- Test Description:
 - This test is aimed to test the capability of the RAVEN database structure to use the same database (HDF5) for subsequential analyses in order to collect all the results in the same HDF5 container
- Original Author:
 - @alfoa
- Creation date:
 - 2015-05-01
- The classes tested in this test are:
 - Databases.HDF5
- This test fulfills the following requirement:
 - R-IS-3
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : @maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History
 2. revision info:
 - author : alfoa
 - date : 2019-03-01
 - description: Modified test location

2.1.71 FRAMEWORK DATABASES HDF5.LOAD AND PUSH REUSING SAME HDF5

This test can be found at “./raven/tests/framework/Databases/HDF5/test_load_and_push_reusing_same_hdf5.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Databases/HDF5.load_and_push_reusing_same_hdf5
```

or

```
./run_framework_tests --re=framework/Databases/HDF5.load_and_push_reusing_
```

- Test Description:
 - This test is aimed to check the possibility in RAVEN to load an HDF5 (pre-generated) and use the same database to store new results.
- Original Author:
 - alfoa
- Creation date:
 - 2016-12-12
- The classes tested in this test are:
 - Databases.HDF5
- This test fulfills the following requirement:
 - R-F-6
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-12-12
 - description: Added test
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 3. revision info:
 - author : alfoa
 - date : 2017-12-14
 - description: Modified input since new structure of DataObject

4. revision info:

- author : alfoa
- date : 2019-03-01
- description: Modified test location

2.1.72 FRAMEWORK.TEST DISTRIBUTIONS

This test can be found at “./raven/tests/framework/unit_tests/Distributions/TestDistributions.py”. This test can be called executing the following command:

```
./run_tests --re=framework.test_distributions
```

or

```
./run_framework_tests --re=framework.test_distributions
```

- Test Description:
 - This test is a Unit Test for the Distributions classes. It tests all the distributions and all the methods.
- Original Author:
 - cogljj
- Creation date:
 - 2013-12-10
- The classes tested in this test are:
 -
- This test fulfills the following requirement:
 - R-RE-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2013-12-10

- description: Adding test of all the rest of the distributions except for binomial.
r23360
2. revision info:
 - author : senrs
 - date : 2015-01-26
 - description: fixed Bug in Distribution.py the attribute mean is obsolete use un-trMean instead
 3. revision info:
 - author : senrs
 - date : 2015-01-26
 - description: Fixed bugs in the if statements, etc...and included tests for Distributions.py
 4. revision info:
 - author : talbpaul
 - date : 2015-02-05
 - description: added pickle methods and tests for distributionsw
 5. revision info:
 - author : alfoa
 - date : 2015-02-10
 - description: finished caching of data
 6. revision info:
 - author : talbpaul
 - date : 2015-03-11
 - description: added way to do beta through keywords, still need to test stochcoll, but testdistros is passing
 7. revision info:
 - author : cogljj
 - date : 2015-04-29
 - description: Adding test of standard deviation.
 8. revision info:
 - author : cogljj
 - date : 2015-05-05
 - description: Adding check of std deviation of a binomial.
 9. revision info:
 - author : cogljj

- date : 2015-05-06
 - description: Adding additional checks of the mean and standard deviation.
10. revision info:
- author : alfoa
 - date : 2015-05-18
 - description: modified test distribution
11. revision info:
- author : mandd
 - date : 2015-06-16
 - description: fixed testDistributions
12. revision info:
- author : alfoa
 - date : 2016-03-31
 - description: Closes #478
13. revision info:
- author : maljdan
 - date : 2016-04-12
 - description: Improving readability of our own code and removing extraneous functions.
14. revision info:
- author : cogljj
 - date : 2016-04-12
 - description: Converting Distributions to use the new input system. All distributions have been converted.
15. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
16. revision info:
- author : alfoa
 - date : 2018-05-10
 - description: Added Log Uniform distribution unit test

2.1.73 FRAMEWORK CODEINTERFACETESTS.GENERICINTERFACE2

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_generic_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.genericInterface2
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.genericInterface2
```

- Test Description:
 - An example of using the the Model Code of type GenericCode. This test is aimed to show the usage of the GenericCode interface present in RAVEN in order to drive an external code using the wild cards approach
- Original Author:
 - senrs
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - Models.Code.GenericCode
- This test fulfills the following requirement:
 - R-IS-6
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-01-04
 - description: Re-golded for updated external model variables
 2. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.

3. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

4. revision info:

- author : alfoa
- date : 2018-10-01
- description: This is a requirement test now.

2.1.74 FRAMEWORK CODEINTERFACETESTS.GENERICINTERFACEPARALLEL

This test can be found at “./raven/tests/framework/CodeInterfaceTests/generic_parallel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.genericInterfaceParallel
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.genericInterfacePa
```

- Test Description:
 - Tests using "Files" in an internalParallel run (which tests pickling and unpickling them). This test is also a requirement test where we test the capability of RAVEN to dispatch multiple parallel jobs based on user-defined information (batchSize)
- Original Author:
 - talbpaul
- Creation date:
 - 2017-08-24
- The classes tested in this test are:
 - Models.Code.GenericCode, Files
- This test fulfills the following requirement:
 - R-F-2
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : talbpaul
- date : 2017-08-24
- description: Created

2.1.75 FRAMEWORK CODEINTERFACETESTS.GENERICINTERFACEIO

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_generic_IO.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.genericInterfaceIO
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.genericInterfaceIO
```

- Test Description:
 - An example of using the the Model Code of type GenericCode. This test is aimed to test the IO system present in the GenericCode interface.
- Original Author:
 - senrs
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - Models.Code.GenericCode
- This test fulfills the following requirement:
 - R-IS-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.

2. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

3. revision info:

- author : alfoa
- date : 2020-10-15
- description: This is now a requirement test (R-IS-2)

2.1.76 FRAMEWORK CODEINTERFACETESTS.GENERICINTERFACEIOCUSTOMOUTPUT

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_generic_interface_custom_out_file.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.genericInterfaceIOCustomOutput
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.genericInterfaceIO
```

- Test Description:
 - An example of using the the Model Code of type GenericCode with a code that produces CSV output file. This test is aimed to test the IO system present in the GenericCode interface. In XML node outputFile the user can specify the specific output file name RAVEN is going to load.
- Original Author:
 - alfoa
- Creation date:
 - 2017-01-24
- The classes tested in this test are:
 - Models.Code.GenericCode
- This test fulfills the following requirement:

– R-IS-6

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : alfoa
- date : 2018-01-24
- description: Adding this test description.

2. revision info:

- author : alfoa
- date : 2018-10-01
- description: This is a requirement test now.

2.1.77 FRAMEWORK CODEINTERFACETESTS.RAVEN.ROM

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RAVEN/rom.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.RAVEN.ROM
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.RAVEN.ROM
```

- Test Description:

- This test is aimed to check the functionality of the RAVEN code interface (RAVEN running RAVEN). It tests the MPI implementation of the SLAVE RAVEN runs. In this case, 3 simultaneous SLAVE RAVEN (batchSize=3) runs are going to be spawned, each of them using 2 processors (NumMPI=2). The NumMPI XML node **MUST BE INPUTTED** if the SLAVE RAVEN runs must run in multiple processors!

- Original Author:

- alfoa

- Creation date:

- 2017-09-16

- The classes tested in this test are:

- Models.Code.RAVEN
- This test fulfills the following requirement:
 - R-SI-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-08-31
 - description: added VariableGroups to inner/slave input file
 2. revision info:
 - author : alfoa
 - date : 2018-10-01
 - description: This is a requirement test now.

2.1.78 FRAMEWORK CODEINTERFACETESTS RELAP5.RELAP5INTERFACETESTNOEXECUTA

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RELAP5/test_relap5_code_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5interfaceTestNo
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5inter
```

- Test Description:
 - An example of using the RELAP5 code interface. This test is aimed to test the mechanics of the interface (no executable).
- Original Author:
 - alfoa
- Creation date:
 - 2015-10-06
- The classes tested in this test are:

- Models.Code.RELAP5
- This test fulfills the following requirement:
 - R-SI-1
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-03-24
 - description: New relap5 test case
 2. revision info:
 - author : talbpaul
 - date : 2016-04-26
 - description: Added check for pre-existing backup files when validating
 3. revision info:
 - author : alfoa
 - date : 2016-08-02
 - description: Added new gold, since the case has been changed
 4. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 5. revision info:
 - author : alfoa
 - date : 2016-11-17
 - description: Closes #750
 6. revision info:
 - author : alfoa
 - date : 2016-11-17
 - description: Added alias for output system
 7. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 8. revision info:

- author : alfoa
- date : 2018-10-01
- description: This is a requirement test now. Req. R-SI-1

9. revision info:

- author : alfoa
- date : 2019-12-05
- description: Modified to check we can handle multiple words in the same card.

10. revision info:

- author : alfoa
- date : 2020-10-31
- description: Added csv xml node in the Code block for showing how to use it.

2.1.79 FRAMEWORK POSTPROCESSORS BASICSTATISTICS GENERAL

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/test_BasicStatistics.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/general
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/general
```

- Test Description:
 - This requirements test checks operation of the basic statistics postprocessor.
- Original Author:
 - alfoa
- Creation date:
 - 2014-05-21
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- This test fulfills the following requirement:
 - R-RA-5

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2017-12-05
- description: convert test to use the new dataobjects

2. revision info:

- author : wangc
- date : 2018-12-13
- description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

3. revision info:

- author : alfoa
- date : 2019-03-07
- description: Modified syntax in Functions as for issue #934

4. revision info:

- author : wangc
- date : 2020-07-16
- description: Disable multipleFeatures option for input output sensitivity calculation, since the condition number is ver big for this case which will cause unstable test results in Windows system.

2.1.80 FRAMEWORK POSTPROCESSORS LIMITSURFACE.TESTLIMITSURFACEPOSTPROCESS

This test can be found at “./raven/tests/framework/PostProcessors/LimitSurface/test_LimitSurface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/LimitSurface.testLimitSurfacePost
```

or

```
./run_framework_tests --re=framework/PostProcessors/LimitSurface.testLimit
```

- Test Description:

- This test is aimed to check the capability of RAVEN to generate Limit Surfaces from a pre-generated data set (in this case, generated with a MonteCarlo sampling), outputting the generated Limit Surface in DataObject.PointSet(s) and Databases.HDF5 reporting both transition boundaries (-1 1) or just one of them.
- Original Author:
 - alfoa
- Creation date:
 - 2014-07-10
- The classes tested in this test are:
 - Models.PostProcessors.LimitSurface, Functions.External, Databases.HDF5
- This test fulfills the following requirement:
 - R-RA-1
 - R-RA-7
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2014-07-11
 - description: Limit Surface pp fix. SVN r28533
 2. revision info:
 - author : alfoa
 - date : 2014-11-17
 - description: restructuring Steps (removed Adaptive and PostProcessor), adding Assembler capability, removed datatype input for Functions and External models, modified all the inputs, added SafestPoint postprocessor and relative regression test, fixed Sampling for discrete distributions, added check for the distributions consistency between framework and RELAP7. SVN r30411
 3. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
 4. revision info:
 - author : talbpaul

- date : 2015-07-06
 - description: standardization of tests
5. revision info:
- author : talbpaul
 - date : 2015-07-06
 - description: Revert “standardization of tests”. This reverts commit 68099325e8daba0f756179a20
6. revision info:
- author : talbpaul
 - date : 2015-07-06
 - description: updated tests, added script
7. revision info:
- author : talbpaul
 - date : 2015-07-07
 - description: updated to restrict partial-node comments
8. revision info:
- author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
9. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
10. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
11. revision info:
- author : alfoa
 - date : 2017-12-14
 - description: Moved LimitSurface Postprocessor tests in a specific directory (test-s/framework/PostProcessors/LimitSurface) and updated for new DataObject structure
12. revision info:
- author : alfoa
 - date : 2018-09-11

- description: Added an additional IOStep to check that the limit surface DataObject can be dumped into a Database of type HDF5

13. revision info:

- author : alfoa
- date : 2019-03-07
- description: Modified syntax in Functions as for issue #934

2.1.81 FRAMEWORK POSTPROCESSORS LIMITSURFACE.TESTLIMITSURFACEINTEGRALPP

This test can be found at “./raven/tests/framework/PostProcessors/LimitSurface/test_LimitSurface_and_integral.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/LimitSurface.testLimitSurfaceInte
```

or

```
./run_framework_tests --re=framework/PostProcessors/LimitSurface.testLimit
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to generate Limit Surfaces from a pre-generated data set (in this case, generated with a MonteCarlo sampling). In addition, this test is aimed to check the capability of RAVEN to compute the integral of the Limit Surface (e.g. Failure probability) both probability-weighted and not.
- Original Author:
 - alfoa
- Creation date:
 - 2015-05-08
- The classes tested in this test are:
 - Models.PostProcessors.LimitSurface, Models.PostProcessors.LimitSurfaceIntegral
- This test fulfills the following requirement:
 - R-RA-7
- Since the creation of this test, the following main revisions have been performed:

1. revision info:
 - author : alfoa
 - date : 2015-05-11
 - description: Limit surface integral
2. revision info:
 - author : alfoa
 - date : 2015-05-12
 - description: Closes #153
3. revision info:
 - author : alfoa
 - date : 2015-06-17
 - description: Closes #213
4. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
5. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
6. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
7. revision info:
 - author : alfoa
 - date : 2017-12-14
 - description: Moved LimitSurface Postprocessor tests in a specific directory (tests/framework/PostProcessors/LimitSurface) and updated for new DataObject structure
8. revision info:
 - author : alfoa
 - date : 2018-09-20
 - description: This test is now a requirement test.
9. revision info:

- author : alfoa
- date : 2019-03-07
- description: Modified syntax in Functions as for issue #934

2.1.82 FRAMEWORK POSTPROCESSORS LIMITSURFACE.TESTLIMITSURFACEINTEGRALPPV

This test can be found at “./raven/tests/framework/PostProcessors/LimitSurface/test_LimitSurface_with_err_bounds.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/LimitSurface.testLimitSurfaceInt
```

or

```
./run_framework_tests --re=framework/PostProcessors/LimitSurface.testLimit
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to compute the integral of the Limit Surface (e.g. Failure probability) reporting the bounding error as well (the maximum error, in probability, in the computation of the limit surface)
- Original Author:
 - alfoa
- Creation date:
 - 2020-04-15
- The classes tested in this test are:
 - Models.PostProcessors.LimitSurface, Models.PostProcessors.LimitSurfaceIntegral
- This test fulfills the following requirement:
 - R-RA-8
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2020-04-15
 - description: Added test for computation of the error bound and linked to new requirement

2.1.83 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION EXACTPCA

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningExactPCA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningExactPCA.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningExactPCA.xml
```

- Test Description:
 - Tests decomposition with PCA model.
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- This test fulfills the following requirement:
 - R-RA-6
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.1.84 FRAMEWORK OPTIMIZERS.MINIMAL

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/minimal.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.Minimal
```

or

```
./run_framework_tests --re=framework/Optimizers.Minimal
```

- Test Description:
 - Provides the minimum possible options for which the Optimizer can run.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-03-06
- The classes tested in this test are:
 - Optimizer
- This test fulfills the following requirement:
 - R-RM-1

2.1.85 FRAMEWORK OPTIMIZERS.CONSTRAINBOUNDARY

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/constrain_boundary.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.ConstrainBoundary
```

or


```
./run_framework_tests --re=framework/Optimizers.ConstrainBoundary
```

- Test Description:
 - This test uses a multidimensional linear function with optima outside the domain space to test boundary constraint handling.
- This test is analytic:
 - This test uses the NDSlant function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-01-30
- The classes tested in this test are:
 - Optimizer
- This test fulfills the following requirement:
 - R-RM-2

2.1.86 FRAMEWORK OPTIMIZERS.CONSTRAINFUNCTION

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/constrain_function.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.ConstrainFunction
```

or

```
./run_framework_tests --re=framework/Optimizers.ConstrainFunction
```

- Test Description:
 - This test uses a multidimensional linear function such that the trajectory must pass through a functional constraint to reach the optimal point.

- Original Author:
 - talbpaul
- Creation date:
 - 2020-02-05
- The classes tested in this test are:
 - Optimizer
- This test fulfills the following requirement:
 - R-RM-2
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : zhouj
 - date : 2020-05-15
 - description: Add implicit constraint node in optimizer and function node with objective as variable.
 2. revision info:
 - author : zhouj
 - date : 2020-06-04
 - description: Add reject opt point reason.

2.1.87 FRAMEWORK ROM TIMESERIES DMD.TRADITIONALDMD

This test can be found at “./raven/tests/framework/ROM/TimeSeries/DMD/test_traditional_dmd.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/DMD.traditionalDMD
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/DMD.traditionalDMD
```

- Test Description:

- This test is aimed to check the mechanics of the DMD ROM using the standard SVD-based algorithm. In addition, it tests the capability for the user to export the ROM info in an XML output file (requirement).
- Original Author:
 - alfoa
- Creation date:
 - 2018-04-25
- The classes tested in this test are:
 - SupervisedLearning.DynamicModeDecomposition
- This test fulfills the following requirement:
 - R-F-5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-04-25
 - description: Adding this test description.
 2. revision info:
 - author : alfoa
 - date : 2018-10-01
 - description: This test is a requirement test now.
 3. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-files to ROM-dataobjects

2.1.88 FRAMEWORK SAMPLERS RESTART.MC

This test can be found at “./raven/tests/framework/Samplers/Restart/test_restart_MC.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/Restart.MC
```

or

```
./run_framework_tests --re=framework/Samplers/Restart.MC
```

- Test Description:
 - Tests restarting a Monte Carlo sampling from restart. `makeCoarse` samples initial data, then `makeRestart` makes additional samples, restarting from the first set of samples. `makeFine` does all the samples without restart for comparison. The model for "coarse" always returns a value of 1, while the model for "restart" returns a value of 2, so you can tell which samples came from which sampling strategy.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:
 - `Samplers.MonteCarlo`
- This test fulfills the following requirement:
 - R-F-4
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-10-01
 - description: This Test is now a requirement test.

2.1.89 FRAMEWORK SAMPLERS RESTART.CSV

This test can be found at “`./raven/tests/framework/Samplers/Restart/test_restart_csv.xml`”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/Restart.CSV
```

or

```
./run_framework_tests --re=framework/Samplers/Restart.CSV
```

- Test Description:
 - This test demonstrates that a restart can be performed from a loaded CSV file, not just an internal data object from an earlier step. As with the other restart tests, in output data objects samples from "course" have an output of 1, while samples from "fine" have an output of 2.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-27
- The classes tested in this test are:
 - Files
- This test fulfills the following requirement:
 - R-F-4
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-10-01
 - description: This Test is now a requirement test.

2.1.90 FRAMEWORK SAMPLERS RESTART.CONSTANT

This test can be found at `./raven/tests/framework/Samplers/Restart/test_restart_constant.xml`. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/Restart.Constant
```

or

```
./run_framework_tests --re=framework/Samplers/Restart.Constant
```

- Test Description:
 - The essence of this test is to demonstrate the restart capability with constant variable, i.e. test the scaling factor for constant samples as mentioned in issue #690

- Original Author:
 - wangc
- Creation date:
 - 2018-08-04
- The classes tested in this test are:
 - Samplers.Grid
- This test fulfills the following requirement:
 - R-F-4
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-10-01
 - description: This Test is now a requirement test.

2.1.91 FRAMEWORK MCMC.METROPOLIS

This test can be found at “./raven/tests/framework/MCMC/test_metropolis.xml”.
 This test can be called executing the following command:

```
./run_tests --re=framework/MCMC.Metropolis
```

or

```
./run_framework_tests --re=framework/MCMC.Metropolis
```

- Test Description:
 - Test the Markov Chain Monte Carlo algorithm: Metropolis Sampling A 2-D multivariate normal distribution is used as the likelihood function. mean: [5, 5], cov=[[1, 0.9], [0.9, 1]] Both input parameters have the standard normal distribution as their prior distribution. The proposal distributions for the input variables are also standard normal distribution. “TargetEvaluation” is used to collect the inputs and outputs from the likelihood model. “SolutionExport” is used to store the posterior values for the input variables, i.e. “xin” and “yin”

- Original Author:
 - wangc
- Creation date:
 - 2020-06-26
- The classes tested in this test are:
 - MCMC.Metropolis
- This test fulfills the following requirement:
 - R-RA-9

2.1.92 FRAMEWORK INTERNALPARALLELTESTS.ROMSCIKIT

This test can be found at “./raven/tests/framework/InternalParallelTests/test_internal_parallel_ROM_scikit.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/InternalParallelTests.ROMscikit
```

or

```
./run_framework_tests --re=framework/InternalParallelTests.ROMscikit
```

- Test Description:
 - This test is aimed to check the functionality of the RAVEN parallelization scheme for Internal Objects. In this case the functionality of the parallelization is tested for the Model ROM of type SKLearn
- Original Author:
 - alfoa
- Creation date:
 - 2015-10-07
- The classes tested in this test are:
 - JobHandler.ParallelPython, Models.ROM.SKLearn

- This test fulfills the following requirement:
 - R-IS-8
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 2. revision info:
 - author : maljdan
 - date : 2016-04-25
 - description: Fixing the internal parallel tests to use support vector regression and making the step sizes look the same in the cluster and local test cases. This creates a more robust test case since the data points will be floating point values.
 3. revision info:
 - author : maljdan
 - date : 2016-04-25
 - description: Switching to a different regressor that yields more consistent results.
 4. revision info:
 - author : maljdan
 - date : 2016-04-25
 - description: Regolding based on 1-nearest neighbor regression. This should effectively report the same information as the training data.
 5. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 6. revision info:
 - author : maljdan
 - date : 2017-09-19
 - description: Adding a maxQueueSize for testing a new feature.
 7. revision info:
 - author : alfoa
 - date : 2018-10-01
 - description: This is a requirement test now.

2.1.93 FRAMEWORK INTERNALPARALLELTESTS.EXTERNALMODEL

This test can be found at “./raven/tests/framework/InternalParallelTests/test_internal_parallel_extModel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/InternalParallelTests.ExternalModel
```

or

```
./run_framework_tests --re=framework/InternalParallelTests.ExternalModel
```

- Test Description:
 - This test is aimed to check the functionality of the RAVEN parallelization scheme for Internal Objects. In this case the functionality of the parallelization is tested for the Model External Model
- Original Author:
 - alfoa
- Creation date:
 - 2015-10-07
- The classes tested in this test are:
 - JobHandler.ParallelPython, Models.ExternalModel
- This test fulfills the following requirement:
 - R-IS-8
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2015-10-19
 - description: New syntax form samplerInit: from sampler_init -> samplerInit
 2. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.

3. revision info:

- author : maljdan
- date : 2016-05-20
- description: Updating the test cases to remove references to Point or History.

4. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

5. revision info:

- author : alfoa
- date : 2018-10-01
- description: This is a requirement test now.

2.1.94 FRAMEWORK INTERNALPARALLELTESTS.POSTPROCESSOR

This test can be found at “./raven/tests/framework/InternalParallelTests/test_internal_parallel_PP_LS.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/InternalParallelTests.PostProcessor
```

or

```
./run_framework_tests --re=framework/InternalParallelTests.PostProcessor
```

- Test Description:
 - This test is aimed to check the functionality of the RAVEN parallelization scheme for Internal Objects. In this case the functionality of the parallelization is tested for the Model PostProcessor
- Original Author:
 - alfoa
- Creation date:
 - 2015-10-07
- The classes tested in this test are:

- JobHandler.ParallelPython, Models.PostProcessor
- This test fulfills the following requirement:
 - R-IS-8
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2015-10-07
 - description: Made the test faster
 2. revision info:
 - author : alfoa
 - date : 2015-10-19
 - description: New syntax form samplerInit: from sampler_init -> samplerInit
 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 4. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 5. revision info:
 - author : alfoa
 - date : 2018-01-09
 - description: Modified for new dataobject structure
 6. revision info:
 - author : alfoa
 - date : 2018-10-01
 - description: This is a requirement test now.
 7. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.1.95 FRAMEWORK INTERNALPARALLELTESTS.POSTPROCESSOR

This test can be found at “./raven/tests/framework/InputTemplates/UQTemplate/new_uq.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/InternalParallelTests.PostProcessor
```

or

```
./run_framework_tests --re=framework/InternalParallelTests.PostProcessor
```

- Test Description:
 - This test is aimed to check the functionality of the RAVEN parallelization scheme for Internal Objects. In this case the functionality of the parallelization is tested for the Model PostProcessor
- Original Author:
 - alfoa
- Creation date:
 - 2015-10-07
- The classes tested in this test are:
 - JobHandler.ParallelPython, Models.PostProcessor
- This test fulfills the following requirement:
 - R-IS-8
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2015-10-07
 - description: Made the test faster
 2. revision info:
 - author : alfoa
 - date : 2015-10-19
 - description: New syntax form samplerInit: from sampler_init -> samplerInit

3. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

4. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

5. revision info:

- author : alfoa
- date : 2018-01-09
- description: Modified for new dataobject structure

6. revision info:

- author : alfoa
- date : 2018-10-01
- description: This is a requirement test now.

7. revision info:

- author : alfoa
- date : 2019-03-07
- description: Modified syntax in Functions as for issue #934

2.2 Analytical tests' description

This section contains the description of all the analytical tests.

2.2.1 SR2ML TESTS.MCSSOLVER

This test can be found at “./raven/plugins/SR2ML/tests/test_MCSSolverMcCormick.xml”. This test can be called executing the following command:

```
./run_tests --re=SR2ML/tests.MCSSolver
```

or

```
./run_framework_tests --re=SR2ML/tests.MCSSolver
```

- Test Description:
 - This model is designed to read from file a list of Minimal Cut Sets (MCSs) and to import such Boolean logic structure as a RAVEN model. Provided the sampled values of Basic Events (BEs) probabilities, the MCSSolver determines the probability of Top Event (TE), i.e., the union of the MCSs.
- This test is analytic:
 - This test evaluates the MCSSolver model for a specific case found in literature (see pages 108-110 of N. J. McCormick, “Reliability and Risk Analysis”, Academic Press inc. [1981]). Provided this set of minimal cuts sets (MCSs) for the top event TopEvent: $TopEvent = A + BD + BE + CD + CE$
- Original Author:
 - mandd
- Creation date:
 - 2020-06-25
- The classes tested in this test are:
 - SR2ML.MCSSolver
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2021-01-13
 - description: move test from PRAplugin to SR2ML

2.2.2 FRAMEWORK CODEINTERFACETESTS RAVEN.BASIC

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RAVEN/basic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RAVEN.Basic
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RAVEN.Basic
```

- Test Description:
 - Basic test of the raven-runs-raven interface. Outer raven runs a grid sampling by changing the upper and lower bounds of the sampledVars distribution on the inner raven. Inner raven runs 100 MC samples, does basic stats, and returns the mean, sigma to the outer raven.
- This test is analytic:
 - Each sample in this test converges towards the analytic solutions discussed in the "changing lower, upper bounds" section of the "attenuate" analytic model documentation.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-01-18
- The classes tested in this test are:
 - Models.Code.RAVEN
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-05-02
 - description: added "fully-correlated" variable for innerUpperBound as a test of the mechanic
 2. revision info:
 - author : talbpaul
 - date : 2018-11-06
 - description: modified inner run to use grid for speed, consistent results

2.2.3 FRAMEWORK CODEINTERFACETESTS RAVEN.RETURNDATABASE

This test can be found at `./raven/tests/framework/CodeInterfaceTests/RAVEN/return_database.xml`. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RAVEN.ReturnDatabase
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RAVEN.ReturnDatabase
```

- Test Description:
 - Tests returning a NetCDF database instead of a set of dataobject CSVs.
- This test is analytic:
 - Each sample in this test converges towards the analytic solutions discussed in the "changing lower, upper bounds" section of the "attenuate" analytic model documentation.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-03-04
- The classes tested in this test are:
 - Models.Code.RAVEN

2.2.4 FRAMEWORK PCA SPARSEGRID ATTENUCORRELATION

This test can be found at `./raven/tests/framework/pca_sparseGridCollocation/test_attenu_correlation.xml`. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sparseGrid/attenuCorrelation
```

or

```
./run_framework_tests --re=framework/pca_sparseGrid/attenuCorrelation
```

- Test Description:
 - Tests the SparseGridCollocation sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:

- This test is analytic in mean and variance using the "attenuation" analytic model documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-23
- The classes tested in this test are:
 - Samplers.SparseGridCollocation,SupervisedLearning.GaussPolynomialROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-files to ROM-dataobject

2.2.5 FRAMEWORK PCA SPARSEGRID ATTENUCORRELATIONMC

This test can be found at `./raven/tests/framework/pca_sparseGridCollocation/test_attenu_correlation_mc.xml`. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sparseGrid/attenuCorrelationMC
```

or

```
./run_framework_tests --re=framework/pca_sparseGrid/attenuCorrelationMC
```

- Test Description:
 - Tests the SparseGridCollocation sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the "attenuation" analytic model documented in the analytic tests.

- Original Author:
 - wangc
- Creation date:
 - 2015-11-23
- The classes tested in this test are:
 - Samplers.MonteCarlo

2.2.6 FRAMEWORK PCA SPARSEGRID POLYCORRELATION

This test can be found at “./raven/tests/framework/pca_sparseGridCollocation/test_poly_correlation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sparseGrid/polyCorrelation
```

or

```
./run_framework_tests --re=framework/pca_sparseGrid/polyCorrelation
```

- Test Description:
 - Tests the SparseGridCollocation sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “tensor polynomial” analytic model documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-23
- The classes tested in this test are:
 - Samplers.SparseGridCollocation,SupervisedLearning.GaussPolynomialROM
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : talbpaul
- date : 2019-01-09
- description: moving from ROM-file to ROM-dataobject

2.2.7 FRAMEWORK PCA SPARSEGRID POLYCORRELATIONMC

This test can be found at “./raven/tests/framework/pca_sparseGridCollocation/test_poly_correlation_mc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sparseGrid/polyCorrelationMC
```

or

```
./run_framework_tests --re=framework/pca_sparseGrid/polyCorrelationMC
```

- Test Description:
 - Tests the SparseGridCollocation sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “tensor polynomial” analytic model documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-23
- The classes tested in this test are:
 - Samplers.SparseGridCollocation,SupervisedLearning.GaussPolynomialROM

2.2.8 FRAMEWORK PCA SPARSEGRID POLYANALYTICALTEST

This test can be found at “./raven/tests/framework/pca_sparseGridCollocation/test_poly.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sparseGrid/polyAnalyticalTest
```

or

```
./run_framework_tests --re=framework/pca_sparseGrid/polyAnalyticalTest
```

- Test Description:
 - Tests the SparseGridCollocation sampler combined with input reductions via PCA method, using uncorrelated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “tensor polynomial” analytic model documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-23
- The classes tested in this test are:
 - Samplers.SparseGridCollocation,SupervisedLearning.GaussPolynomialROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.9 FRAMEWORK.MODELS.EXTERNAL.ALL METHODS

This test can be found at “./raven/tests/framework/Models/External/all_methods.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.Models.External.all_methods
```

or

```
./run_framework_tests --re=framework.Models.External.all_methods
```

- Test Description:
 - This test is used to exercise all of the optional ExternalModel methods and assure they behave as expected.
- This test is analytic:
 - This test uses the analytic model ”attenuate”, which is documented in the analytical test documentation. Additionally, values of the ”from” variables are exactly determined because they are set in the extmod methods:
 - * fromReadMoreXML: pi (3.14159)
 - * fromInit : sqrt(pi) (1.77245)
 - * fromCNISelf : pi/2 (1.57080)
 - * fromCNIDict : 2*sqrt(pi) (3.54491)
 - The exit strength ”ans” is analytic with results as follows (Note that for testing purposes, the model always adds 0.05 to y_2 before calculating the exit strength):
 - * y_1, y_2, ans
 - * 0.0, 0.0, 0.97531
 - * 0.0, 1.0, 0.59156
 - * 1.0, 0.0, 0.59156
 - * 1.0, 1.0, 0.35880
- Original Author:
 - talbpaul
- Creation date:
 - 2018-01-17
- The classes tested in this test are:
 - Models.ExternalModel

2.2.10 FRAMEWORK.MODELS.EXTERNAL.SERIALIZE EXT MODEL

This test can be found at “./raven/tests/framework/Models/External/serialize_ext_model_and_use.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.Models.External.serialize_ext_model
```

or

```
./run_framework_tests --re=framework.Models.External.serialize_ext_model
```

- Test Description:
 - This test is used to exercise the ability or RAVEN to serialize (pickle) the external model class and re-use it in the framework.
- This test is analytic:
 - This test uses the analytic model ”attenuate“, which is documented in the analytical test documentation. Additionally, values of the ”from“ variables are exactly determined because they are set in the extmod methods:
 - * fromReadMoreXML: pi (3.14159)
 - * fromInit : sqrt(pi) (1.77245)
 - * fromCNISelf : pi/2 (1.57080)
 - * fromCNIDict : 2*sqrt(pi) (3.54491)
 - The exit strength ”ans“ is analytic with results as follows (Note that for testing purposes, the model always adds 0.05 to y_2 before calculating the exit strength):
 - * y_1, y_2, ans
 - * 0.0, 0.0, 0.97531
 - * 0.0, 1.0, 0.59156
 - * 1.0, 0.0, 0.59156
 - * 1.0, 1.0, 0.35880
- Original Author:
 - alfoa
- Creation date:
 - 2020-09-26
- The classes tested in this test are:
 - Models.ExternalModel

2.2.11 FRAMEWORK OPTIMIZERS SIMULATEDANNEALING.EXPONENTIALSA

This test can be found at “./raven/tests/framework/Optimizers/SimulatedAnnealing/ExponentialSA/test_simulatedAnnealing.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/SimulatedAnnealing.ExponentialSA
```

or

```
./run_framework_tests --re=framework/Optimizers/SimulatedAnnealing.ExponentialSA
```

- Test Description:
 - This test assesses the Simulated Annealing algorithm using Boltzmann cooling schedule on the Beale function. The nominal dimensionality of the problem is 2, i.e., variables are x, y . The objective variable is ans . The global minimum is at: $ans(3,0.5) = 0.0$ Parameter range is $-4.5 \leq x, y \leq 4.5$.
- This test is analytic:
 - This test uses beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-02-11
- The classes tested in this test are:
 - SimulatedAnnealing

2.2.12 FRAMEWORK OPTIMIZERS SIMULATEDANNEALING.EXPONENTIALEGGHOLDER

This test can be found at “./raven/tests/framework/Optimizers/SimulatedAnnealing/ExponentialEggHolder/test_simulatedAnnealing_eggHold.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/SimulatedAnnealing.ExponentialEggHolder
```

or

```
./run_framework_tests --re=framework/Optimizers/SimulatedAnnealing.Exponent
```

- Test Description:
 - This test assesses the Simulated Annealing algorithm using Boltzmann cooling schedule on the Eggholder function. The eggholder function is a very challenging objective function, as it has enormous number of local minima, The nominal dimensionality of the problem is 2, i.e., variables are x, y . The objective variable is ans . The global minimum is at: $ans(512,404.2319) = -959.6407$ parameter range is $-512 \leq x, y \leq 512$
- This test is analytic:
 - This test uses eggHolder’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-02-11
- The classes tested in this test are:
 - SimulatedAnnealing

2.2.13 FRAMEWORK OPTIMIZERS SIMULATEDANNEALING.BOLTZMANSA

This test can be found at “./raven/tests/framework/Optimizers/SimulatedAnnealing/BoltzmanSA/test_simulatedAnnealing.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/SimulatedAnnealing.BoltzmanSA
```

or

```
./run_framework_tests --re=framework/Optimizers/SimulatedAnnealing.BoltzmanSA
```

- Test Description:

- This test assesses the Simulated Annealing algorithm using Boltzmann cooling schedule on the Beale function. The nominal dimensionality of the problem is 2, i.e., variables are x, y . The objective variable is `ans`. The global minimum is at: `ans(3,0.5) = 0.0` Parameter range is $-4.5 \leq x, y \leq 4.5$.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-02-11
- The classes tested in this test are:
 - SimulatedAnnealing

2.2.14 FRAMEWORK OPTIMIZERS SIMULATEDANNEALING.BOLTZMANEGGHOLDER

This test can be found at “`./raven/tests/framework/Optimizers/SimulatedAnnealing/BoltzmanEggHolder/test_simulatedAnnealing_eggHold.xml`”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/SimulatedAnnealing.BoltzmanEggHolder
```

or

```
./run_framework_tests --re=framework/Optimizers/SimulatedAnnealing.BoltzmanEggHolder
```

- Test Description:
 - This test assesses the Simulated Annealing algorithm using Boltzmann cooling schedule on the Eggholder function. The eggholder function is a very challenging objective function, as it has enormous number of local minima, The nominal dimensionality of the problem is 2, i.e., variables are x, y . The objective variable is `ans`. The global minimum is at: `ans(512,404.2319) = -959.6407` parameter range is $-512 \leq x, y \leq 512$
- This test is analytic:

- This test uses eggHolder’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-02-11
- The classes tested in this test are:
 - SimulatedAnnealing

2.2.15 FRAMEWORK OPTIMIZERS SIMULATEDANNEALING.CAUCHYSA

This test can be found at “./raven/tests/framework/Optimizers/SimulatedAnnealing/CauchySA/test_simulatedAnnealing.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/SimulatedAnnealing.CauchySA
```

or

```
./run_framework_tests --re=framework/Optimizers/SimulatedAnnealing.CauchySA
```

- Test Description:
 - This test assesses the Simulated Annealing algorithm using Boltzmann cooling schedule on the Beale function. The nominal dimensionality of the problem is 2, i.e., variables are x, y . The objective variable is ans . The global minimum is at: $ans(3,0.5) = 0.0$ Parameter range is $-4.5 \leq x, y \leq 4.5$.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - MohammadAbdo
- Creation date:

– 2020-02-11

- The classes tested in this test are:
 - SimulatedAnnealing

2.2.16 FRAMEWORK OPTIMIZERS SIMULATEDANNEALING.CAUCHYSA

This test can be found at “./raven/tests/framework/Optimizers/SimulatedAnnealing/CauchySA/test_simulatedAnnealing_OptPath.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/SimulatedAnnealing.CauchySA
```

or

```
./run_framework_tests --re=framework/Optimizers/SimulatedAnnealing.CauchySA
```

- Test Description:
 - This test assesses the Simulated Annealing algorithm using Boltzmann cooling schedule on the Beale function. The nominal dimensionality of the problem is 2, i.e., variables are x, y . The objective variable is ans . The global minimum is at: $ans(3,0.5) = 0.0$ Parameter range is $-4.5 \leq x, y \leq 4.5$.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-02-11
- The classes tested in this test are:
 - SimulatedAnnealing

2.2.17 FRAMEWORK OPTIMIZERS SIMULATEDANNEALING.CAUCHYEGGHOLDER

This test can be found at “./raven/tests/framework/Optimizers/SimulatedAnnealing/CauchyEggHolder/test_simulatedAnnealing_eggHold.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/SimulatedAnnealing.CauchyEggHolder
```

or

```
./run_framework_tests --re=framework/Optimizers/SimulatedAnnealing.CauchyE
```

- Test Description:
 - This test assesses the Simulated Annealing algorithm using Boltzmann cooling schedule on the Eggholder function. The eggholder function is a very challenging objective function, as it has enormous number of local minima, The nominal dimensionality of the problem is 2, i.e., variables are x, y . The objective variable is ans . The global minimum is at: $ans(512,404.2319) = -959.6407$ parameter range is $-512 \leq x, y \leq 512$
- This test is analytic:
 - This test uses eggHolder’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-02-11
- The classes tested in this test are:
 - SimulatedAnnealing

2.2.18 FRAMEWORK OPTIMIZERS SIMULATEDANNEALING.VERYFASTSA

This test can be found at “./raven/tests/framework/Optimizers/SimulatedAnnealing/VeryFastSA/test_simulatedAnnealing.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/SimulatedAnnealing.VeryFastSA
```

or

```
./run_framework_tests --re=framework/Optimizers/SimulatedAnnealing.VeryFast
```

- Test Description:
 - This test assesses the Simulated Annealing algorithm using Boltzmann cooling schedule on the Beale function. The nominal dimensionality of the problem is 2, i.e., variables are x, y . The objective variable is ans . The global minimum is at: $ans(3,0.5) = 0.0$ Parameter range is $-4.5 \leq x, y \leq 4.5$.
- This test is analytic:
 - This test uses beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-02-11
- The classes tested in this test are:
 - SimulatedAnnealing

2.2.19 FRAMEWORK OPTIMIZERS.MINIMAL

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/minimal.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.Minimal
```

or

```
./run_framework_tests --re=framework/Optimizers.Minimal
```

- Test Description:
 - Provides the minimum possible options for which the Optimizer can run.
- This test is analytic:

- This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-03-06
- The classes tested in this test are:
 - Optimizer
- This test fulfills the following requirement:
 - R-RM-1

2.2.20 FRAMEWORK OPTIMIZERS.BASIC

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/basic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.Basic
```

or

```
./run_framework_tests --re=framework/Optimizers.Basic
```

- Test Description:
 - This is the most basic test of the Optimizer. It employs finite difference for the gradient estimation, gradient history for the step determination, and strict improvement acceptance. It converges only on the number of samples taken with a single trajectory on the Beale function. It also demonstrates typical outstream options for optimization. It also tests passing through constants and functions.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:

- talbpaul
- Creation date:
 - 2020-01-29
- The classes tested in this test are:
 - Optimizer

2.2.21 FRAMEWORK OPTIMIZERS.CONVERGEGRADIENT

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/converge_gradient.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.ConvergeGradient
```

or

```
./run_framework_tests --re=framework/Optimizers.ConvergeGradient
```

- Test Description:
 - Extending on the Basic test, this test converges on gradient magnitude instead of number of samples. Also converges with persistence.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-01-29
- The classes tested in this test are:
 - Optimizer

2.2.22 FRAMEWORK OPTIMIZERS.CONVERGESTEPSIZE

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/converge_stepsize.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.ConvergeStepsize
```

or

```
./run_framework_tests --re=framework/Optimizers.ConvergeStepsize
```

- Test Description:
 - Extending on the Basic test, this test converges on step size instead of number of samples.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-01-29
- The classes tested in this test are:
 - Optimizer

2.2.23 FRAMEWORK OPTIMIZERS.CONVERGEOBJECTIVE

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/converge_objective.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.ConvergeObjective
```

or

```
./run_framework_tests --re=framework/Optimizers.ConvergeObjective
```


- Test Description:
 - Extending on the Basic test, this test converges on change in objective function instead of number of samples.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-01-29
- The classes tested in this test are:
 - Optimizer

2.2.24 FRAMEWORK OPTIMIZERS.CONSTRAINBOUNDARY

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/constrain_boundary.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.ConstrainBoundary
```

or

```
./run_framework_tests --re=framework/Optimizers.ConstrainBoundary
```

- Test Description:
 - This test uses a multidimensional linear function with optima outside the domain space to test boundary constraint handling.
- This test is analytic:
 - This test uses the NDSlant function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul

- Creation date:
 - 2020-01-30
- The classes tested in this test are:
 - Optimizer
- This test fulfills the following requirement:
 - R-RM-2

2.2.25 FRAMEWORK OPTIMIZERS GRADIENTDESCENT.INITSAMPLER

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/init_sampler.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GradientDescent.InitSampler
```

or

```
./run_framework_tests --re=framework/Optimizers/GradientDescent.InitSampler
```

- Test Description:
 - Extending on the Basic test, this test initializes values using a Sampler.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-02-10
- The classes tested in this test are:
 - Optimizer

2.2.26 FRAMEWORK OPTIMIZERS.CENTRALDIFF

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/central_diff.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.CentralDiff
```

or

```
./run_framework_tests --re=framework/Optimizers.CentralDiff
```

- Test Description:
 - Tests Central Difference gradient approximation, otherwise as the Basic case.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-03-03
- The classes tested in this test are:
 - Optimizer

2.2.27 FRAMEWORK OPTIMIZERS.FDCONJGRAD

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/fd_conjgrad.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.FDConjgrad
```

or

```
./run_framework_tests --re=framework/Optimizers.FDConjgrad
```

- Test Description:

- Tests the Conjugate Gradient StepManipulator with the FiniteDifference GradientApproximator for the GradientDescent Optimizer.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-02-26
- The classes tested in this test are:
 - Optimizer

2.2.28 FRAMEWORK OPTIMIZERS.MAX

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/max.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.Max
```

or

```
./run_framework_tests --re=framework/Optimizers.Max
```

- Test Description:
 - This tests the capability of the optimizer to perform a maximization instead of minimization.
- This test is analytic:
 - This test uses an inverted Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:

– 2020-03-02

- The classes tested in this test are:
 - Optimizer

2.2.29 FRAMEWORK OPTIMIZERS.SPSA

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/spsa.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.SPSA
```

or

```
./run_framework_tests --re=framework/Optimizers.SPSA
```

- Test Description:
 - Tests SPSA gradient approximation, otherwise as the Basic case.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-03-03
- The classes tested in this test are:
 - Optimizer

2.2.30 FRAMEWORK OPTIMIZERS.MULTITRAJ

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/multitraj.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.MultiTraj
```

or

```
./run_framework_tests --re=framework/Optimizers.MultiTraj
```

- Test Description:
 - Same as Basic, but adds several trajectories to check proper handling.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-03-01
- The classes tested in this test are:
 - Optimizer

2.2.31 FRAMEWORK OPTIMIZERS.WRITEFINAL

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/write_final.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.WriteFinal
```

or

```
./run_framework_tests --re=framework/Optimizers.WriteFinal
```

- Test Description:
 - Tests writing only final solution to the solution export.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.

- Original Author:
 - talbpaul
- Creation date:
 - 2020-03-04
- The classes tested in this test are:
 - Optimizer

2.2.32 FRAMEWORK OPTIMIZERS.INITIALSTEP

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/initial_step.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.InitialStep
```

or

```
./run_framework_tests --re=framework/Optimizers.InitialStep
```

- Test Description:
 - Same as basic test, but increases the initial step size. The first perturbed point in optOut for x should be -1.98 instead of -1.99, which is the default. Similarly, y should be -2.01 in the second perturbed point instead of the default -2.006.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-01-19
- The classes tested in this test are:
 - Optimizer.StepManipulator

2.2.33 FRAMEWORK OPTIMIZERS.1VARIABLE

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/1_variable_gradient.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.1variable
```

or

```
./run_framework_tests --re=framework/Optimizers.1variable
```

- Test Description:
 - This test is inspired by the the test “framework/Optimizers.Basic”. The only two differences are: 1) a single parameter is optimized and, 2) all the gradient options (finite difference, spsa, central diff, etc.) are tested. This test is aimed to show how a single variable optimization can be performed with RAVEN.
- This test is analytic:
 - This test uses Beale’s function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - alfoa
- Creation date:
 - 2021-01-04
- The classes tested in this test are:
 - Optimizer

2.2.34 FRAMEWORK OPTIMIZERS.VALLEY

This test can be found at “./raven/tests/framework/Optimizers/GradientDescent/valley.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers.Valley
```

or


```
./run_framework_tests --re=framework/Optimizers.Valley
```

- Test Description:
 - Tests optimization against the "valley problem" where a dominant gradient leads to a diagonal valley with an optimal point along it. Generally quite challenging for gradient descent methods. Note we cut this run short before it really starts converging well.
- This test is analytic:
 - This test uses the Parabolic Valley analytic case, documented in the analytic case definitions.
- Original Author:
 - talbpaul
- Creation date:
 - 2021-08-17
- The classes tested in this test are:
 - Optimizer

2.2.35 FRAMEWORK OPTIMIZERS GA.MINWREPLACEMENT

This test can be found at `./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/testGAMinwRep.xml`. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MinwReplacement
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MinwReplacement
```

- Test Description:
 - This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is unconstrained, it is a minimization problem, and the sampling is from discrete variables with replacement.

- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2021-09-27
 - description: added a constant node in the GeneticAlgorithm in order to show that this Optimizer can handle constants. Closes #1665

2.2.36 FRAMEWORK OPTIMIZERS GA.MINWREPLACEMENTCONVAHDP

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/testGAMinwRepConvAHDp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MinwReplacementConvAHDp
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MinwReplacementConvAHDp
```

- Test Description:
 - This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is unconstrained, it is a minimization problem, and the sampling is from discrete variables with replacement. The convergence criterion used is the (p-Average Hausdorff Distance between populations) AHDp.

- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.37 FRAMEWORK OPTIMIZERS GA.MINWOREPLACEMENT

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/testGAMinwoRep.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MinwoReplacement
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MinwoReplacement
```

- Test Description:
 - This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is unconstrained, it is a minimization problem, and the sampling is from discrete variables without replacement.
- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16

- The classes tested in this test are:
 - GeneticAlgorithm

2.2.38 FRAMEWORK OPTIMIZERS GA.MINWOREPLACEMENTCONVAHDP

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/testGAMinwoRepConvAHDp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MinwoReplacementConvAHDp
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MinwoReplacementConvAHDp
```

- Test Description:
 - This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is unconstrained, it is a minimization problem, and the sampling is from discrete variables without replacement. The convergence criterion used is the (p-Average Hausdorff Distance between populations) AHDp.
- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.39 FRAMEWORK OPTIMIZERS GA.MAXWREPLACEMENT

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/testGAMaxwRep.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MaxwReplacement
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MaxwReplacement
```

- Test Description:
 - This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is unconstrained, it is a maximization problem, and the sampling is from discrete variables with replacement.
- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.40 FRAMEWORK OPTIMIZERS GA.MAXWREPLACEMENTDIFFDIST

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/testGAMaxwRepDifferentDist.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MaxwReplacementDiffDist
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MaxwReplacementDiffDist
```

- Test Description:
 - This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is unconstrained, it is a maximization problem, and the sampling is from discrete variables with replacement. Each variable/gene belongs to a different distribution.
- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2021-05-13
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.41 FRAMEWORK OPTIMIZERS GA.MAXWREPLACEMENTCONVAHDP

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/testGAMaxwRepConvAHDp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MaxwReplacementConvAHDp
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MaxwReplacementConvAHDp
```

- Test Description:

- This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is unconstrained, it is a maximization problem, and the sampling is from discrete variables with replacement. The convergence criterion used is the (p-Average Hausdorff Distance between populations) AHDp.
- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.42 FRAMEWORK OPTIMIZERS GA.MAXWOREPLACEMENT

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/testGAMaxwoRep.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MaxwoReplacement
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MaxwoReplacement
```

- Test Description:
 - This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is unconstrained, it is a maximization problem, and the sampling is from discrete variables without replacement.
- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.

- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.43 FRAMEWORK OPTIMIZERS GA.MAXWREPLACEMENTDIFFDIST

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/testGAMaxwoRepDifferentDist.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MaxwReplacementDiffDist
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MaxwReplacementDiffDist
```

- Test Description:
 - This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is unconstrained, it is a maximization problem, and the sampling is from discrete variables without replacement. Each variable/gene belongs to a different distribution.
- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2021-05-13
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.44 FRAMEWORK OPTIMIZERS GA.MAXWOREPLACEMENTCONVAHDP

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/testGAMaxwoRepConvAHDp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MaxwoReplacementConvAHDp
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MaxwoReplacementConvAHDp
```

- Test Description:
 - This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is unconstrained, it is a maximization problem, and the sampling is from discrete variables without replacement. The convergence criterion used is the (p-Average Hausdorff Distance between populations) AHDp.
- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.45 FRAMEWORK OPTIMIZERS GA.MAXWREPLACEMENTSPHERECONSTRAINED

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/constrained/testGAMaxwRepSphereConstrained.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MaxwReplacementSphereConstrained
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MaxwReplacementSphereCon
```

- Test Description:
 - This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is constrained by two constraints, a linear and a circular constraints, the constraints can be found in myLocalSum.py and myLocalSumSphereConstrained.py respectively. It is a maximization problem, and the sampling is from discrete variables with replacement.
- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.46 FRAMEWORK OPTIMIZERS GA.MAXWREPLACEMENTSPHERECONSTRAINED

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/constrained/testGAMaxwRepSphereConstrainedInvLin.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MaxwReplacementSphereConstrained
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MaxwReplacementSphereCon
```

- Test Description:

- This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is constrained by two constraints, a linear and a circular constraints, the constraints can be found in myLocalSum.py and myLocalSumSphereConstrained.py respectively. It is a maximization problem, and the sampling is from discrete variables with replacement.
- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.47 FRAMEWORK OPTIMIZERS GA.MISHRABIRDCONSTRAINED

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/continuous/constrained/testGAMishraBirdConstrained.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.MishraBirdConstrained
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.MishraBirdConstrained
```

- Test Description:
 - This test assesses the Genetic algorithm on the Mishra function. The nominal dimensionality of the problem is 2. The objective variable is ans. The problem is constrained. It is a minimization problem, and the sampling is from continuous variables. The fitness function used the feasible first parameterless fitness.
- This test is analytic:
 - This test uses Mishra function.

- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.48 FRAMEWORK OPTIMIZERS GA.MISHRABIRDCONSTRAINEDINVLIN

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/continuous/constrained/testGAMishraBirdConstrainedInvLin.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.mishraBirdConstrainedInvLin
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.mishraBirdConstrainedInvLin
```

- Test Description:
 - This test assesses the Genetic algorithm on the Mishra function. The nominal dimensionality of the problem is 2. The objective variable is ans. The problem is constrained. It is a minimization problem, and the sampling is from continuous variables. The fitness function used the Linear Inverse.
- This test is analytic:
 - This test uses Mishra function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.49 FRAMEWORK OPTIMIZERS GA.ROSENBROCKDISKCONSTRAINED

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/continuous/constrained/testGARosenbrockDiskConstrained.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.RosenbrockDiskConstrained
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.RosenbrockDiskConstrained
```

- Test Description:
 - This test assesses the Genetic algorithm on the Rosenbrock function. The nominal dimensionality of the problem is 2. The objective variable is ans. The problem is constrained. It is a minimization problem, and the sampling is from continuous variables. The fitness function used the feasible first parameterless fitness.
- This test is analytic:
 - This test uses Rosenbrock function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.50 FRAMEWORK OPTIMIZERS GA.ROSENBROCKDISKCONSTRAINEDINVLIN

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/continuous/constrained/testGARosenbrockDiskConstrainedInvLin.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.RosenbrockDiskConstrainedInvLin
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.RosenbrockDiskConstrained
```

- Test Description:
 - This test assesses the Genetic algorithm on the Rosenbrock function. The nominal dimensionality of the problem is 2. The objective variable is ans. The problem is constrained. It is a minimization problem, and the sampling is from continuous variables. The fitness function used the inverse linear fitness.
- This test is analytic:
 - This test uses Rosenbrock function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.51 FRAMEWORK OPTIMIZERS GA.SIMIONESCUCONSTRAINED

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/continuous/constrained/testGASimionescuConstrained.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.simionescuConstrained
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.simionescuConstrained
```

- Test Description:
 - This test assesses the Genetic algorithm on the Simionescu function. The nominal dimensionality of the problem is 2. The objective variable is ans. The problem is constrained. It is a minimization problem, and the sampling is from continuous variables. The fitness function used the feasible first fitness.

- This test is analytic:
 - This test uses Simionescu function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.52 FRAMEWORK OPTIMIZERS GA.SIMIONESCUCONSTRAINEDINVLIN

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/continuous/constrained/testGASimionescuConstrainedInvLin.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.simionescuConstrainedInvLin
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.simionescuConstrainedInvLin
```

- Test Description:
 - This test assesses the Genetic algorithm on the Simionescu function. The nominal dimensionality of the problem is 2. The objective variable is ans. The problem is constrained. It is a minimization problem, and the sampling is from continuous variables. The fitness function used the inverse linear fitness.
- This test is analytic:
 - This test uses Simionescu function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16

- The classes tested in this test are:
 - GeneticAlgorithm

2.2.53 FRAMEWORK OPTIMIZERS GA.TOWNSENDCONSTRAINED

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/continuous/constrained/testGATownsendConstrained.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.townsendConstrained
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.townsendConstrained
```

- Test Description:
 - This test assesses the Genetic algorithm on the townsend function. The nominal dimensionality of the problem is 2. The objective variable is ans. The problem is constrained. It is a minimization problem, and the sampling is from continuous variables. The fitness function used the feasible first parameterless fitness.
- This test is analytic:
 - This test uses townsend function, which is documented in the analytic tests documentation under the Optimizer functions section.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.54 FRAMEWORK OPTIMIZERS GA.TOWNSENDCONSTRAINEDINVLIN

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/continuous/constrained/testGATownsendConstrainedInvLin.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GA.townsendConstrainedInvLin
```

or

```
./run_framework_tests --re=framework/Optimizers/GA.townsendConstrainedInvLin
```

- Test Description:
 - This test assesses the Genetic algorithm on the townsend function. The nominal dimensionality of the problem is 2. The objective variable is ans. The problem is constrained. It is a minimization problem, and the sampling is from continuous variables. The fitness function used the inverse linear fitness.
- This test is analytic:
 - This test uses Simionescu function.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-05-16
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.55 FRAMEWORK OPTIMIZERS GENETICALGORITHMS.PPF BOUND

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/test_ppf_bound.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GeneticAlgorithms.ppf_bound
```

or

```
./run_framework_tests --re=framework/Optimizers/GeneticAlgorithms.ppf_boun
```

- Test Description:
 - This test assesses the Genetic algorithm using the weighted sum found in myLocalSum.py function. Especially test UniformDiscrete.ppf function when the upper bound value is returned from cross validation. The nominal dimensionality of the test problem is 3. The objective variable is ans. The problem is unconstrained, it is a maximization problem, and the sampling is from discrete variables with replacement.
- This test is analytic:
 - This test uses myLocalSum’s analytic objective function.
- Original Author:
 - wangc
- Creation date:
 - 2021-07-23
- The classes tested in this test are:
 - GeneticAlgorithm

2.2.56 FRAMEWORK SAMPLERS ROM VERIFYGAUSSPOLYROM

This test can be found at “./raven/tests/framework/ROM/verify_time_scgpc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/verifyGaussPolyRom
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/verifyGaussPolyRom
```

- Test Description:
 - This test validates the time-dependent GaussPolynomialROM by sampling it and comparing to the original model.
- This test is analytic:

- This test uses the "projectile.py" ballistic model and tracks position in time. The evaluations of this model as well as the ROMs should match the results documented there.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-03-09
- The classes tested in this test are:
 - SupervisedLearning.GaussPolynomialROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-08-09
 - description: Add pivotParameter for time dependent ROM

2.2.57 FRAMEWORK SAMPLERS ROM SOBOL SPARSEGRID SCGPCSUDRETANALYTIC

This test can be found at ". /raven/tests/framework/ROM/SparseGrid/test_scgpc_sudret.xml". This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/Sobol/SparseGrid/scgpcSudretAnalyt
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/Sobol/SparseGrid/scgpcSu
```

- Test Description:
 - This analytic test checks the performance of HDMRRom against the simple Sudret polynomial
- This test is analytic:
 - dumprom.xml has analytic mean and variance, documented in the analytic tests documentation under "Global Sobol Sensitivity: Sudret".

- Original Author:
 - talbpaul
- Creation date:
 - 2016-03-18
- The classes tested in this test are:
 - SupervisedLearning.GaussPolynomialROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-12-20
 - description: moved ROM metadata writing from direct-to-file to direct-to-dataobject

2.2.58 FRAMEWORK SAMPLERS ROM SOBOL SOBOLSUDRETANALYTIC

This test can be found at “./raven/tests/framework/ROM/Sobol/test_sobol_sudret.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/Sobol/sobolSudretAnalytic
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/Sobol/sobolSudretAnalytic
```

- Test Description:
 - This analytic test checks the performance of HDMRRom against the simple Sudret polynomial.
- This test is analytic:
 - dumprom.xml has analytic mean and variance, and is documented in the analytic test documentation under ”Global Sobol Sensitivity: Sudret”
- Original Author:
 - talbpaul
- Creation date:

- 2016-03-09
- The classes tested in this test are:
 - SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-12-20
 - description: moved ROM metadata writing from direct-to-file to direct-to-dataobject

2.2.59 FRAMEWORK SAMPLERS ROM SOBOL SOBOLISHIGAMIANALYTIC

This test can be found at “./raven/tests/framework/ROM/Sobol/test_sobol_ishigami.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/Sobol/sobolIshigamiAnalytic
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/Sobol/sobolIshigamiAnalytic
```

- Test Description:
 - This analytic test checks the performance of HDMRRom against the sinusoidal Ishigami function.
- This test is analytic:
 - dumprom.xml has analytic mean and variance, and is documented in the analytic test document under “Global Sobol Sensitivity: Ishigami”.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-03-08
- The classes tested in this test are:
 - SupervisedLearning.HDMRRom

- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-12-20
 - description: moved ROM metadata writing from direct-to-file to direct-to-dataobject

2.2.60 FRAMEWORK SAMPLERS ROM SOBOL SOBOLGFUNCTION

This test can be found at “./raven/tests/framework/ROM/Sobol/test_sobol_gfunc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/Sobol/sobolGFunction
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/Sobol/sobolGFunction
```

- Test Description:
 - This analytic test checks the performance of HDMRRom against the discontinuous Sobol G-Function.
- This test is analytic:
 - dumprom.xml has analytic mean and variance, but is poorly converged for this model. It is documented in the analytic test documentation under ”Sobol G-Function”
- Original Author:
 - talbpaul
- Creation date:
 - 2016-03-08
- The classes tested in this test are:
 - SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-12-20
 - description: moved ROM metadata writing from direct-to-file to direct-to-dataobject

2.2.61 FRAMEWORK SAMPLERS ROM SOBOL ANOVAONCUTHDMR

This test can be found at “./raven/tests/framework/ROM/Sobol/test_anova_cut.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/Sobol/AnovaOnCutHDMR
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/Sobol/AnovaOnCutHDMR
```

- Test Description:
 - This analytically tests calculating variance using ANOVA on cut-HDMR.
- This test is analytic:
 - This test is analytic in the variance, Sobol sensitivities, and mean of the response. These parameters are documented in the analytic tests documentation under ”Second-Order ANOVA of Second-Order Cut-HDMR Expansion of Sudret”.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-03-11
- The classes tested in this test are:
 - SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-12-20
 - description: moved ROM metadata writing from direct-to-file to direct-to-dataobject

2.2.62 FRAMEWORK SAMPLERS ROM SOBOL ADAPTIVESOBOL

This test can be found at “./raven/tests/framework/ROM/Sobol/test_adapt_sobol.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/Sobol/AdaptiveSobol
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/Sobol/AdaptiveSobol
```

- Test Description:
 - This tests using the AdaptiveSobol sampler to construct HDMRRom ROMs.
- This test is analytic:
 - dumprom.xml has analytic results for mean and variance in that are documented in the Attenuation section of the analytic tests manual.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-02-08
- The classes tested in this test are:
 - Samplers.AdaptiveSobol,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-12-20
 - description: moved ROM metadata writing from direct-to-file to direct-to-dataobject

2.2.63 FRAMEWORK SAMPLERS ROM SOBOL VERIFYHDMRRom

This test can be found at “./raven/tests/framework/ROM/Sobol/verify_time_dep_sobol.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/Sobol/verifyHDMRRom
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/Sobol/verifyHDMRRom
```

- Test Description:
 - This analytic test checks that the time-dependent HDMRRom performs the same as the model it’s representing.
- This test is analytic:
 - This test uses ”projectile.py” as documented in the analytic tests document, and makes several evaluations of position based on time.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-11-08
- The classes tested in this test are:
 - SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-08-09
 - description: Add pivotParameter for time dependent ROM

2.2.64 FRAMEWORK SAMPLERS SPARSEGRID.GAMMA LARGE SCALE

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_scgpc_gamma_large_scale.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid.gamma_large_scale
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid.gamma_large_scale
```

- Test Description:
 - This tests using SparseGridCollocation with gamma-distributed inputs with large scale parameters to test the fix for issue #693
- This test is analytic:
 - This test is analytic in mean and variance documented in the analytic tests. Two models are used: $ans = x1 + x2$ with analytic mean = 4.7, variance = 3.565 $ans = x1^{**2} + x2^{**2}$ with analytic mean = 14.655, variance = 215.638125
- Original Author:
 - wangc
- Creation date:
 - 2018-07-26
- The classes tested in this test are:
 - Samplers.SparseGridCollocation

2.2.65 FRAMEWORK PCA ADAPTIVE SGC TEST ADAPTIVE SGC ATTENUATION

This test can be found at “./raven/tests/framework/pca_adaptive_sgc/test_adaptive_sgc_attenuation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_adaptive_sgc/test_adaptive_sgc_attenuation
```

or

```
./run_framework_tests --re=framework/pca_adaptive_sgc/test_adaptive_sgc_at
```

- Test Description:
 - Tests use of the PCA method for adaptive sparse grids on exponential decay models with uncorrelated inputs.
- This test is analytic:
 - Attenuation with Multivariate Normal Distribution
- Original Author:
 - wangc
- Creation date:
 - 2015-11-18
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers.AdaptiveSparseGrid, SupervisedLearning.GaussPolynomial
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving rom ROM-file to ROM-dataobject

2.2.66 FRAMEWORK PCA ADAPTIVE SGC.TEST ADAPTIVE SGC POLY CORRELATION

This test can be found at “./raven/tests/framework/pca_adaptive_sgc/test_adaptive_sgc_poly_correlation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_adaptive_sgc.test_adaptive_sgc_poly_correlat
```

or

```
./run_framework_tests --re=framework/pca_adaptive_sgc.test_adaptive_sgc_po
```

- Test Description:
 - Tests use of the PCA method for adaptive sparse grids on polynomial models.
- This test is analytic:
 - "Tensor Polynomial (First-Order) with Multivariate Normal Distribution"
- Original Author:
 - wangc
- Creation date:
 - 2015-11-20
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers.AdaptiveSparseGrid, SupervisedLearning.GaussPolynomial
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.67 FRAMEWORK PCA ADAPTIVE SGC.TEST ADAPTIVE SGC POLY PCS ANALYTIC

This test can be found at `./raven/tests/framework/pca_adaptive_sgc/test_adaptive_sgc_poly_pca_analytic.xml`. This test can be called executing the following command:

```
./run_tests --re=framework/pca_adaptive_sgc.test_adaptive_sgc_poly_pcs_ana
```

or

```
./run_framework_tests --re=framework/pca_adaptive_sgc.test_adaptive_sgc_po
```

- Test Description:
 - Tests the SparseGridCollocation sampler combined with input reductions via PCA method, using uncorrelated multivariate normal distributions.

- This test is analytic:
 - This test is analytic in mean and variance using the "tensor polynomial" analytic model documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2015-12-01
- The classes tested in this test are:
 - Samplers.AdaptiveSparseGrid,SupervisedLearning.GaussPolynomialROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.68 FRAMEWORK PCA SOBEL TEST ADAPTIVE SOBEL POLY

This test can be found at `./raven/tests/framework/pca_sobel/test_adapt_sobel_poly.xml`. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_adaptive_sobel_poly
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_adaptive_sobel_poly
```

- Test Description:
 - Tests the Adaptive Sobol sampler combined with input reductions via PCA method, using uncorrelated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the "tensor polynomial" analytic model documented in the analytic tests.

- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.AdaptiveSobol,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.69 FRAMEWORK PCA SOBOLE TEST ADAPTIVE SOBOLE ATTENUATION

This test can be found at “./raven/tests/framework/pca_sobol/test_adapt_sobol_attenu.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobol/test_adaptive_sobol_attenuation
```

or

```
./run_framework_tests --re=framework/pca_sobol/test_adaptive_sobol_attenuation
```

- Test Description:
 - Tests the Adaptive Sobol sampler combined with input reductions via PCA method, using uncorrelated multivariate normal distribution.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” analytic model documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:

– 2016-01-06

- The classes tested in this test are:
 - Samplers.AdaptiveSobol,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.70 FRAMEWORK PCA SOBOL TEST ADAPTIVE SOBOL ATTENU CORRELATION

This test can be found at “./raven/tests/framework/pca_sobol/test_adapt_sobol_correlation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobol/test_adaptive_sobol_attenu_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobol/test_adaptive_sobol_attenu_c
```

- Test Description:
 - Tests the Adaptive Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-02-17
- The classes tested in this test are:

- Samplers.AdaptiveSobol,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.71 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/framework/pca_sobel/test_sobel_correlation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobol,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : talbpaul
- date : 2019-01-09
- description: moving from ROM-file to ROM-dataobject

2.2.72 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/test_pbs.xmlcluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the "attenuation" and "tensor polynomial" analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.73 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/test_mpiqsub_local.xmlpbspro_mpi.xmlcluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.74 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/test_mpiqsub_flex.xmlcluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.75 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/test_mpiqsub_limitnode.xmlcluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.76 FRAMEWORK PCA SOBOLE TEST SOBOLE POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/test_mpiqsub_nosplit.xmlcluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobol/test_sobol_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobol/test_sobol_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobol,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.77 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/test_mpiqsub_forced.xmlcluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.78 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/test_mpiqsub_1_proc.xmlpbspro_mpi.xmlcluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.79 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/AdaptiveSobel/test_adapt_sobel_parallel.xml../pbspro_mpi.xml../cluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.80 FRAMEWORK PCA SOBOLE TEST SOBOLE POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/InternalParallel/test_internal_parallel_extModel.xml../pbspro_mpi.xml../cluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobol/test_sobol_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobol/test_sobol_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobol,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.81 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/InternalParallel/test_internal_parallel_ROM_scikit.xml../pbspro_mpi.xml../cluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.82 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/InternalParallel/test_internal_parallel_PP_LS.xml../pbspro_mpi.xml../cluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.83 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/InternalParallel/test_internal_MSR.xml../pbspro_mpi.xml../cluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.84 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/InternalParallel/test_ensemble_model_picard_parallel.xml../pbspro_mpi.xml../cluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.85 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/InternalParallel/test_ensemble_model_linear_internal_parallel.xml../pbspro_mpi.xml../cluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.86 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/InternalParallel/test_hybrid_model_code.xml../pbspro_mpi.xml../cluster_runinfo_legacy.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.87 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/InternalParallel/test_hybrid_model_external.xml../pbspro_mpi.xml../cluster_runinfo_legacy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.88 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/RavenRunsRaven/rom.xml../pbspro_mpi.xml../cluster_runinfo.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.2.89 FRAMEWORK PCA SOBEL TEST SOBEL POLY CORRELATION

This test can be found at “./raven/tests/cluster_tests/RavenRunsRaven/code.xml../pbspro_mpi.xml../cluster_runinfo.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

or

```
./run_framework_tests --re=framework/pca_sobel/test_sobel_poly_correlation
```

- Test Description:
 - Tests the Sobol sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- This test is analytic:
 - This test is analytic in mean and variance using the “attenuation” and “tensor polynomial” analytic models documented in the analytic tests.
- Original Author:
 - wangc
- Creation date:
 - 2016-01-06
- The classes tested in this test are:
 - Samplers.Sobel,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.3 Verification tests’ description

This section contains the description of all the verification tests.

2.3.1 FRAMEWORK.TESTMARKOVMODEL 3STATES COMPLEXTRANS

This test can be found at “./raven/plugins/SR2ML/tests/test_markovModel_3states_complexTrans.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.TestMarkovModel_3states_complexTrans
```

or

```
./run_framework_tests --re=framework.TestMarkovModel_3states_complexTrans
```

- Test Description:
 - This test is aimed to check Markov model with 3 states and complex transition
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-08
- The classes tested in this test are:
 - Models.ExternalModel.MarkovModel
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-11-27
 - description: Added Plugin name extension

2.3.2 FRAMEWORK.TESTMARKOVMODEL 3STATES INSTANTTRANS

This test can be found at “./raven/plugins/SR2ML/tests/test_markovModel_3states_instantTrans.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.TestMarkovModel_3states_instantTrans
```

or

```
./run_framework_tests --re=framework.TestMarkovModel_3states_instantTrans
```

- Test Description:
 - This test is aimed to check Markov model with 3 states with instant transition
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-08
- The classes tested in this test are:
 - Models.ExternalModel.MarkovModel
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-11-27
 - description: Added Plugin name extension

2.3.3 FRAMEWORK.TESTMARKOVMODEL 2STATES TAU

This test can be found at “./raven/plugins/SR2ML/tests/test_markovModel_2states_tau.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.TestMarkovModel_2states_tau
```

or

```
./run_framework_tests --re=framework.TestMarkovModel_2states_tau
```

- Test Description:
 - This test is aimed to check Markov model with 2 states
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-08

- The classes tested in this test are:
 - Models.ExternalModel.MarkovModel
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-11-27
 - description: Added Plugin name extension

2.3.4 SR2ML TESTS.MCSSOLVER

This test can be found at “./raven/plugins/SR2ML/tests/test_MCSSolver.xml”.
 This test can be called executing the following command:

```
./run_tests --re=SR2ML/tests.MCSSolver
```

or

```
./run_framework_tests --re=SR2ML/tests.MCSSolver
```

- Test Description:
 - This model is designed to read from file a list of Minimal Cut Sets (MCSs) and to import such Boolean logic structure as a RAVEN model. Provided the sampled values of Basic Events (BEs) probabilities, the MCSSolver determines the probability of Top Event (TE), i.e., the union of the MCSs.
- Original Author:
 - mandd
- Creation date:
 - 2020-06-25
- The classes tested in this test are:
 - SR2ML.MCSSolver
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : wangc
- date : 2021-01-13
- description: move test from PRAplugin to SR2ML

2.3.5 SR2ML MCSSOLVERTD

This test can be found at “./raven/plugins/SR2ML/tests/test_MCSSolver_TD.xml”. This test can be called executing the following command:

```
./run_tests --re=SR2ML/MCSSolverTD
```

or

```
./run_framework_tests --re=SR2ML/MCSSolverTD
```

- Test Description:
 - This model is designed to read from file a list of Minimal Cut Sets (MCSs) and to import such Boolean logic structure as a RAVEN model. Provided the sampled values of Basic Events (BEs) probabilities, the MCSSolver determines the probability of Top Event (TE), i.e., the union of the MCSs. This test performs such calculation on a historySet which contains the actual status of the basic events. The status is represented as a Boolean variable: 0 (Basic event set to False: probability=p(BE)) or 1 (Basic event set to True: probability=1.0).
- Original Author:
 - mandd
- Creation date:
 - 2020-12-20
- The classes tested in this test are:
 - SR2ML/MCSSolver

2.3.6 SR2ML MCSSOLVERTD PS

This test can be found at “./raven/plugins/SR2ML/tests/test_MCSSolver_TD_fromPS.xml”. This test can be called executing the following command:

```
./run_tests --re=SR2ML/MCSSLverTD_PS
```

or

```
./run_framework_tests --re=SR2ML/MCSSLverTD_PS
```

- Test Description:
 - This model is designed to read from file a list of Minimal Cut Sets (MCSs) and to import such Boolean logic structure as a RAVEN model. Provided the sampled values of Basic Events (BEs) probabilities, the MCSSolver determines the probability of Top Event (TE), i.e., the union of the MCSs. This test performs a time-dependent calculation provided a PointSet which contains the actual status of the basic events. Each basic event is represented by the initial and final time where basic event is set to True (i.e., with probability=1.0)
- Original Author:
 - mandd
- Creation date:
 - 2021-01-06
- The classes tested in this test are:
 - SR2ML/MCSSLver

2.3.7 SR2ML TESTS.MCSSLVER

This test can be found at “./raven/plugins/SR2ML/tests/test_MCSSLver_margin.xml”. This test can be called executing the following command:

```
./run_tests --re=SR2ML/tests.MCSSLver
```

or

```
./run_framework_tests --re=SR2ML/tests.MCSSLver
```

- Test Description:

- This model is designed to read from file a list of Minimal Cut Sets (MCSs) and to import such Boolean logic structure as a RAVEN model. Provided the sampled values of Basic Events (BEs) margin values, the MCSSolver determines the margin of Top Event (TE) using the euclidean metrics
- Original Author:
 - mandd
- Creation date:
 - 2021-04-27
- The classes tested in this test are:
 - SR2ML.MCSSolver

2.3.8 FRAMEWORK.MC FW COST

This test can be found at “./raven/plugins/SR2ML/tests/CRAFT/test_mc_fw_cost.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.mc_fw_cost
```

or

```
./run_framework_tests --re=framework.mc_fw_cost
```

- Test Description:
 - This test is aimed to check the craft workflow
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-14
- The classes tested in this test are:
 - Models.EnsembleModel

2.3.9 FRAMEWORK.TIME DEP FW COST

This test can be found at “./raven/plugins/SR2ML/tests/CRAFT/test_time_dep_fw_cost.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.time_dep_fw_cost
```

or

```
./run_framework_tests --re=framework.time_dep_fw_cost
```

- Test Description:
 - This test is aimed to check craft workflow with time dependent data
- Original Author:
 - mandd, wange
- Creation date:
 - 2019-05-14
- The classes tested in this test are:
 - Models.EnsembleModel

2.3.10 FRAMEWORK.SEPT MILESTONE

This test can be found at “./raven/plugins/SR2ML/tests/CRAFT/test_sept_milestone.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.sept_milestone
```

or

```
./run_framework_tests --re=framework.sept_milestone
```

- Test Description:
 - This test is aimed to check the craft workflow for Sept. 2018 milestone
- Original Author:

- mandd, wangc
- Creation date:
 - 2019-05-14
- The classes tested in this test are:
 - Models.EnsembleModel

2.3.11 FRAMEWORK.RELIABILITYMODEL.TIMEDEPRELIABILITY

This test can be found at “./raven/plugins/SR2ML/tests/reliabilityModel/test_time_dep_ensemble_reliability.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.reliabilityModel.timeDepReliability
```

or

```
./run_framework_tests --re=framework.reliabilityModel.timeDepReliability
```

- Test Description:
 - This test is aimed to check the reliability model with time series input. The reliability model will return time-dependent reliability data, such as failure rate, cumulative failure value, probability failure value, and reliability value.
- Original Author:
 - wangc
- Creation date:
 - 2020-02-12
- The classes tested in this test are:
 - Models.ExternalModel

2.3.12 FRAMEWORK POSTPROCESSORS ETIMPORTERPOSTPROCESSOR.ET IMPORTER OPENPSA

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/ETImporterPostProcessor/test_ETImporter.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ETImporterPostProcessor.ET_importer
```

or

```
./run_framework_tests --re=framework/PostProcessors/ETImporterPostProcessor
```

- Test Description:
 - Tests of the ETImporter post-processor: it read an event-tree (ET) from an .xml file (eventTree.xml) and it imports the ET structure into a PointSet. Note that the ET needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - ETImporter

2.3.13 FRAMEWORK POSTPROCESSORS ETIMPORTERPOSTPROCESSOR.ET IMPORTER OPENPSA SYMBOLIC

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/ETImporterPostProcessor/test_ETImporterSymbolic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ETImporterPostProcessor.ET_importer
```

or

```
./run_framework_tests --re=framework/PostProcessors/ETImporterPostProcessor
```

- Test Description:
 - Tests of the ETImporter post-processor: it read an event-tree (ET) from an .xml file (eventTree.xml) and it imports the ET structure into a PointSet. Note that the ET needs to be in an OpenPSA format. In particular, this tests checks that capability of the PP to manage symbolic ID for the ET sequences. Note that in this configuration, a mapping file is generated
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - ETImporter

2.3.14 FRAMEWORK POSTPROCESSORS ETIMPORTERPOSTPROCESSOR.ET IMPORTER OPENPSA DEFINE BRANCH

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/ETImporterPostProcessor/test_ETImporter_DefineBranch.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ETImporterPostProcessor.ET_importer
```

or

```
./run_framework_tests --re=framework/PostProcessors/ETImporterPostProcessor
```

- Test Description:
 - Tests of the ETImporter post-processor: it read an event-tree (ET) from an .xml file (eventTree.xml) and it imports the ET structure into a PointSet. Note that the ET needs to be in an OpenPSA format. In particular, this tests checks that capability of the PP to manage ETs that contains by-pass branches.
- Original Author:
 - mandd
- Creation date:

– 2017-11-07

- The classes tested in this test are:
 - EImporter

2.3.15 FRAMEWORK POSTPROCESSORS.ETIMPORTERPOSTPROCESSORMULTIPLEET.ET IMPORTER OPENPSA COUPLEDET

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/EImporterPostProcessorMultipleET.test_EImporterMultipleET.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors.EImporterPostProcessorMultipleET
```

or

```
./run_framework_tests --re=framework/PostProcessors.EImporterPostProcessor
```

- Test Description:
 - Tests of the EImporter post-processor: it read an event-tree (ET) from multiple .xml files (eventTree1.xml and eventTree2.xml). Note that one single ET is provided but its structure is splitted into two files, i.e., the sub ETs are linked. and it imports the full ET structure into a PointSet. Note that the ETs need to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.16 FRAMEWORK POSTPROCESSORS ETIMPORTERPOSTPROCESSOR.ET IMPORTER OPENPSA EXPAND

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/EImporterPostProcessorExpand.test_EImporter_expand.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ETImporterPostProcessor.ET_importer
```

or

```
./run_framework_tests --re=framework/PostProcessors/ETImporterPostProcessor.ET_importer
```

- Test Description:
 - Tests of the ETImporter post-processor: it read an event-tree (ET) from an .xml file (eventTree.xml) and it imports the ET structure into a PointSet. Note that the ET needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - ETImporter

2.3.17 FRAMEWORK POSTPROCESSORS ETIMPORTERPOSTPROCESSOR.ET IMPORTER 3BRANCHES

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/ETImporterPostProcessor.ET_importer_3branches.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ETImporterPostProcessor.ET_importer_3branches
```

or

```
./run_framework_tests --re=framework/PostProcessors/ETImporterPostProcessor.ET_importer_3branches
```

- Test Description:
 - Tests of the ETImporter post-processor: it read an event-tree (ET) from an .xml file (eventTree.xml) and it imports the ET structure into a PointSet. Note that the ET needs to be in an OpenPSA format.

- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.18 FRAMEWORK POSTPROCESSORS ETIMPORTERPOSTPROCESSOR.ETIMPORTER 3BRANCHES NEWNUMBERING

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/EImporterPostProcessor.test_EImporter_3branches_NewNumbering.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/EImporterPostProcessor.EImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/EImporterPostProcessor
```

- Test Description:
 - Tests of the EImporter post-processor: it read an event-tree (ET) from an .xml file (eventTree.xml) and it imports the ET structure into a PointSet. Note that the ET needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.19 FRAMEWORK POSTPROCESSORS ETIMPORTERPOSTPROCESSOR.ETIMPORTER 3BRANCHES NEWNUMBERING EXPANDED

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/ETImporterPostProcessor/test_ETImporter_3branches_NewNumbering_expanded.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ETImporterPostProcessor.ETImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/ETImporterPostProcessor
```

- Test Description:
 - Tests of the ETImporter post-processor: it read an event-tree (ET) from an .xml file (eventTree.xml) and it imports the ET structure into a PointSet. Note that the ET needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - ETImporter

2.3.20 FRAMEWORK POSTPROCESSORS MCSIMPORTERPOSTPROCESSOR.MCSIMPORTER

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/MCSImporterPostProcessor/test_MCSImporter.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/MCSImporterPostProcessor.MCSImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/MCSImporterPostProcessor
```

- Test Description:

- Tests of the MCSImporter post-processor: it reads a list of MCSs generated from Sapphire and it imports it as a PointSet. We specifically test the capability to expand the list of Basic Events from an external file.
- Original Author:
 - mandd
- Creation date:
 - 2019-11-01
- The classes tested in this test are:
 - MCSImporter

2.3.21 FRAMEWORK POSTPROCESSORS MCSIMPORTERPOSTPROCESSOR.MCSIMPORTER NOEXPAND

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/MCSImporterPostProcessor/test_MCSImporter_noExpand.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/MCSImporterPostProcessor.MCSImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/MCSImporterPostProcessor
```

- Test Description:
 - Tests of the MCSImporter post-processor: it reads a list of MCSs generated from Sapphire and it imports it as a PointSet.
- Original Author:
 - mandd
- Creation date:
 - 2019-11-01
- The classes tested in this test are:
 - MCSImporter

2.3.22 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER AND

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_and.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - ETImporter

2.3.23 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER AND WITHNOT

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_and_withNOT.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.24 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER AND WITHNOT EMBEDDED

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_and_withNOT_embedded.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.25 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_and_withNOT_withNOT_embedded.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - ETImporter

2.3.26 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER ATLEAST

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_atleast.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.27 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER CARDINALITY

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_cardinality.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.28 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER COMPONENT

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_component.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - ETImporter

2.3.29 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER IFF

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_iff.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.30 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER IMPY

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_imply.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.31 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER MULTIPLEFTS

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_multipleFTs.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - ETImporter

2.3.32 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER NAND

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_nand.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```


- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.33 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER NOR

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_nor.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.34 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER OR

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_or.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - ETImporter

2.3.35 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER OR HOUSEEVENT

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_or_houseEvent.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.36 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER XOR

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_xor.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - EImporter

2.3.37 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER NOT

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_not.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - ETImporter

2.3.38 FRAMEWORK POSTPROCESSORS FTIMPORTERPOSTPROCESSOR.FTIMPORTER DOUBLENOT

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/FTImporterPostProcessor/test_FTImporter_doubleNot.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FTImporterPostProcessor.FTImporter
```

or

```
./run_framework_tests --re=framework/PostProcessors/FTImporterPostProcessor
```

- Test Description:
 - Tests of the FTImporter post-processor: it read a fault-tree (ET) from an .xml file (eventTree.xml) and it imports the FT structure into a PointSet. Note that the FT needs to be in an OpenPSA format.
- Original Author:
 - mandd
- Creation date:
 - 2017-11-07
- The classes tested in this test are:
 - ETImporter

2.3.39 FRAMEWORK POSTPROCESSORS DATALABELING CLUSTERING

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/DataLabeling/test_dataClassifier_postprocessor.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataLabeling/Clustering/
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataLabeling/Clustering/
```

- Test Description:
 - Test DataLabeling PostProcessor with PointSet input
- Original Author:
 - wangc
- Creation date:
 - 2018-10-18
- The classes tested in this test are:
 - DataLabeling

- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-04-26
 - description: Move the test from PRAPLugin to RAVEN tests/framework/PostProcessors/DataLabeling, this is because the DataLabeling PostProcessor is currently in RAVEN main repository.
 2. revision info:
 - author : wangc
 - date : 2019-05-02
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.
 3. revision info:
 - author : wangc
 - date : 2021-05-20
 - description: Change DataClassifier to DataLabeling

2.3.40 FRAMEWORK POSTPROCESSORS DATALABELING CLUSTERING

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/DataLabeling/test_dataClassifier_postprocessor_HS.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataLabeling/Clustering/
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataLabeling/Clustering/
```

- Test Description:
 - Test DataLabeling PostProcessor with HistorySet input
- Original Author:
 - wangc
- Creation date:

– 2018-10-18

- The classes tested in this test are:

- DataLabeling

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2019-04-26
- description: Move the test from PRAPLugin to RAVEN tests/framework/PostProcessors/DataLabeling, this is because the DataLabeling PostProcessor is currently in RAVEN main repository.

2. revision info:

- author : wangc
- date : 2019-05-02
- description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

3. revision info:

- author : wangc
- date : 2021-05-20
- description: Change DataClassifier to DataLabeling

2.3.41 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR RISKMEASURES DISCRETE

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/RiskMeasuresDiscrete/test_riskMeasuresDiscrete.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/RiskMeasuresDiscrete
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor/RiskMeasuresDiscrete
```

- Test Description:

- Tests of the four risk importance measures: Risk Achievement Worth (RAW), Risk Reduction Worth (RRW), Birnbaum (B) and Fussell-Vesely (FV)
- Original Author:
 - mandd
- Creation date:
 - 2016-10-31
- The classes tested in this test are:
 - InterfacedPostProcessor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2021-04-22
 - description: Move 'RiskMeasuresDiscrete' from InterfacedPostProcessor to Plugin-Type PostProcessor. The subType of this PostProcessor will be changed to 'RiskMeasuresDiscrete', and the 'method' node under this PostProcessor is no longer needed.

2.3.42 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR RISKMEASURESDISCRETEMULTIPLEIE

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/RiskMeasuresDiscreteMultipleIE/test_riskMeasuresDiscreteMultipleIE.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/RiskMeasuresDiscreteMultipleIE
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor/RiskMeasuresDiscreteMultipleIE
```

- Test Description:
 - Tests of the four risk importance measures for multiple IEs: Risk Achievement Worth (RAW), Risk Reduction Worth (RRW), Birnbaum (B) and Fussell-Vesely (FV)
- Original Author:

- mandd
- Creation date:
 - 2017-02-23
- The classes tested in this test are:
 - InterfacedPostProcessor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2021-04-22
 - description: Move 'RiskMeasuresDiscrete' from InterfacedPostProcessor to Plugin-Type PostProcessor. The subType of this PostProcessor will be changed to 'RiskMeasuresDiscrete', and the 'method' node under this PostProcessor is no longer needed.

2.3.43 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR RISKMEASUREMENTS

This test can be found at “./raven/plugins/SR2ML/tests/PostProcessors/RiskMeasuresDiscrete/test_riskMonitor.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/RiskMeasuresDiscrete
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor/RiskMeasuresDiscrete
```

- Test Description:
 - Tests of the four risk importance measures for time dependent data: Risk Achievement Worth (RAW), Risk Reduction Worth (RRW), Birnbaum (B) and Fussell-Vesely (FV)
- Original Author:
 - mandd
- Creation date:
 - 2017-02-23

- The classes tested in this test are:
 - InterfacedPostProcessor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2021-04-22
 - description: Move 'RiskMeasuresDiscrete' from InterfacedPostProcessor to Plugin-Type PostProcessor. The subType of this PostProcessor will be changed to 'RiskMeasuresDiscrete', and the 'method' node under this PostProcessor is no longer needed.

2.3.44 FRAMEWORK.BKP OPTIMIZATION

This test can be found at “./raven/plugins/LOGOS/tests/test_bkp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.bkp_optimization
```

or

```
./run_framework_tests --re=framework.bkp_optimization
```

- Test Description:
 - This test is aimed to check the capital investment model for bounded knapsack problem
- Original Author:
 - mandd, wangc
- Creation date:
 - 2019-05-20
- The classes tested in this test are:
 - Models.ExternalModel.CapitalInvestmentModel

2.3.45 PLUGINS NUSAR.TESTBATTERYREPLACEMENT

This test can be found at “./raven/plugins/LOGOS/tests/test_battery_replacement_cashflow.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/NuSAR.TestBatteryReplacement
```

or

```
./run_framework_tests --re=plugins/NuSAR.TestBatteryReplacement
```

- Test Description:
 - This input tests an example of external model: battery replacement cashflow calculations.
- Original Author:
 - wangc
- Creation date:
 - 2019-07-12
- The classes tested in this test are:
 - Models.ExternalModel

2.3.46 PLUGINS NUSAR.TESTINCREMENTALNPV

This test can be found at “./raven/plugins/LOGOS/tests/test_incremental_npv.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/NuSAR.TestIncrementalNPV
```

or

```
./run_framework_tests --re=plugins/NuSAR.TestIncrementalNPV
```

- Test Description:
 - This input tests an example of external model: incremental cashflow calculations.

- Original Author:
 - wangc
- Creation date:
 - 2019-07-12
- The classes tested in this test are:
 - Models.ExternalModel

2.3.47 PLUGINS NUSAR.TESTINCREMENTALNPV

This test can be found at “./raven/plugins/LOGOS/tests/test_incremental_npv_options.xml”. This test can be called executing the following command:

```
./run_tests --re=plugins/NuSAR.TestIncrementalNPV
```

or

```
./run_framework_tests --re=plugins/NuSAR.TestIncrementalNPV
```

- Test Description:
 - This input tests an example of external model: incremental cashflow calculations.
- Original Author:
 - wangc
- Creation date:
 - 2019-07-12
- The classes tested in this test are:
 - Models.ExternalModel

2.3.48 FRAMEWORK.BASEKNAPSACK

This test can be found at “./raven/plugins/LOGOS/tests/test_BaseKnapsackModel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.BaseKnapsack
```

or

```
./run_framework_tests --re=framework.BaseKnapsack
```

- Test Description:
 - This test is aimed to test the BaseKnapsackModel class
- Original Author:
 - mandd
- Creation date:
 - 2021-02-02
- The classes tested in this test are:
 - Models.ExternalModel.LOGOS.BaseKnapsackModel

2.3.49 FRAMEWORK.MULTIPLEKNAPSACK

This test can be found at “./raven/plugins/LOGOS/tests/test_MultipleKnapsackModel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.MultipleKnapsack
```

or

```
./run_framework_tests --re=framework.MultipleKnapsack
```

- Test Description:
 - This test is aimed to test the MultipleKnapsackModel class
- Original Author:

- mandd
- Creation date:
 - 2021-02-02
- The classes tested in this test are:
 - Models.ExternalModel.LOGOS.MultipleKnapsackModel

2.3.50 LOGOS.LOGOS SKP

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/skp/test_skp_external_constraint.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_skp
```

or

```
./run_framework_tests --re=Logos.logos_skp
```

- Test Description:
 - This test is aimed to check logos_skp
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - SingleKnapsack

2.3.51 LOGOS.LOGOS BKP SCENARIOS

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/skp/test_bkp_scenarios.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_bkp_scenarios
```

or

```
./run_framework_tests --re=Logos.logos_bkp_scenarios
```

- Test Description:
 - This test is aimed to check logos_bkp_scenarios
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - SingleKnapsack

2.3.52 LOGOS.LOGOS SKP MANDATED

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/skp/test_mandated.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_skp_mandated
```

or

```
./run_framework_tests --re=Logos.logos_skp_mandated
```

- Test Description:
 - This test is aimed to check logos_skp_mandated
- Original Author:
 - wangc
- Creation date:

– 2019-11-18

- The classes tested in this test are:
 - SingleKnapsack

2.3.53 LOGOS.LOGOS SKP NO INDEX

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/skp/test_noIndex.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_skp_no_index
```

or

```
./run_framework_tests --re=Logos.logos_skp_no_index
```

- Test Description:
 - This test is aimed to check logos_skp_no_index
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - SingleKnapsack

2.3.54 LOGOS.LOGOS SKP NPV

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/skp/test_npv.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_skp_npv
```

or

```
./run_framework_tests --re=Logos.logos_skp_npv
```


- Test Description:
 - This test is aimed to check logos_skp_npv
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - SingleKnapsack

2.3.55 LOGOS.LOGOS SKP SCENARIOS

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/skp/test_skp_scenarios.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_skp_scenarios
```

or

```
./run_framework_tests --re=Logos.logos_skp_scenarios
```

- Test Description:
 - This test is aimed to check logos_skp_scenarios
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - SingleKnapsack

2.3.56 LOGOS.LOGOS SKP EE 41 PROJECTS

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/skp/test_EE_41_projects.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_skp_EE_41_projects
```

or

```
./run_framework_tests --re=Logos.logos_skp_EE_41_projects
```

- Test Description:
 - This test is aimed to check logos_skp_EE_41_projects
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - SingleKnapsack

2.3.57 CAPITALINVESTMENTS DRO.TEST DROMCKP SCENARIO I

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_dromckp_scenario_I.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_dromckp_scenario_I
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_dromckp_scenario_I
```

- Test Description:

- This test is aimed to check distributional robust optimization. In this case, radius_ambiguity is setted to 2E9.
- Original Author:
 - wangc
- Creation date:
 - 2020-04-29
- The classes tested in this test are:
 - DROMCKP

2.3.58 CAPITALINVESTMENTS DRO.TEST DROMCKP SCENARIO II

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_dromckp_scenario_II.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_dromckp_scenario_II
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_dromckp_scenario_II
```

- Test Description:
 - This test is aimed to check distributional robust optimization. In this case, radius_ambiguity is setted to 10E9.
- Original Author:
 - wangc
- Creation date:
 - 2020-04-29
- The classes tested in this test are:
 - DROMCKP

2.3.59 CAPITALINVESTMENTS DRO.TEST DRO ADJUSTED USE CASE 2A

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_dro_adjusted_use_case_2a.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_dro_adjusted_use_case_2a
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_dro_adjusted_use_ca
```

- Test Description:
 - This test is aimed to check the distributionally robust optimization for use case 2 for FY19 In this case, we only consider capital budget (OM is not included). In this test, radius_ambiguity = 0.0, and this test is equivalent to the stochastic optimization problem.
- Original Author:
 - wangc
- Creation date:
 - 2020-04-29
- The classes tested in this test are:
 - DROMCKP

2.3.60 CAPITALINVESTMENTS DRO.TEST DRO ADJUSTED USE CASE 2A

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_dro_adjusted_use_case_2a_I.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_dro_adjusted_use_case_2a
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_dro_adjusted_use_ca
```

- Test Description:
 - This test is aimed to check the distributionally robust optimization for use case 2 for FY19 In this case, we only consider capital budget (OM is not included). In this test, radius_ambiguity = 0.01
- Original Author:
 - wangc
- Creation date:
 - 2020-04-29
- The classes tested in this test are:
 - DROMCKP

2.3.61 CAPITALINVESTMENTS DRO.TEST DRO ADJUSTED USE CASE 2A

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_dro_adjusted_use_case_2a_II.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_dro_adjusted_use_case_2a
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_dro_adjusted_use_ca
```

- Test Description:
 - This test is aimed to check the distributionally robust optimization for use case 2 for FY19 In this case, we only consider capital budget (OM is not included). In this test, radius_ambiguity = 0.1
- Original Author:
 - wangc
- Creation date:
 - 2020-04-29
- The classes tested in this test are:
 - DROMCKP

2.3.62 CAPITALINVESTMENTS DRO.TEST DRO ADJUSTED USE CASE 2A

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_dro_adjusted_use_case_2a_III.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_dro_adjusted_use_case_2a
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_dro_adjusted_use_ca
```

- Test Description:
 - This test is aimed to check the distributionally robust optimization for use case 2 for FY19 In this case, we only consider capital budget (OM is not included). In this test, radius_ambiguity = 1.0
- Original Author:
 - wangc
- Creation date:
 - 2020-04-29
- The classes tested in this test are:
 - DROMCKP

2.3.63 CAPITALINVESTMENTS DRO.TEST DRO ADJUSTED USE CASE 2A

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_dro_adjusted_use_case_2a_IV.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_dro_adjusted_use_case_2a
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_dro_adjusted_use_ca
```

- Test Description:

- This test is aimed to check the distributionally robust optimization for use case 2 for FY19 In this case, we only consider capital budget (OM is not included). In this test, radius_ambiguity = 10.0

- Original Author:

- wangc

- Creation date:

- 2020-04-29

- The classes tested in this test are:

- DROMCKP

2.3.64 CAPITALINVESTMENTS DRO.TEST DROSKP SCENARIO I

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_droskp_scenario_I.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_droskp_scenario_I
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_droskp_scenario_I
```

- Test Description:

- This test is aimed to check the distributionally robust optimization for Single Knapsack Problem, we only consider capital budget. In this test, radius_ambiguity = 0.01.

- Original Author:

- wangc

- Creation date:

- 2020-04-30

- The classes tested in this test are:

- DROSKP

2.3.65 CAPITALINVESTMENTS DRO.TEST DROSKP SCENARIO II

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_drokp_scenario_II.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_drokp_scenario_II
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_drokp_scenario_II
```

- Test Description:
 - This test is aimed to check the distributionally robust optimization for Single Knapsack Problem, we only consider capital budget. In this test, radius_ambiguity = 0.05.
- Original Author:
 - wangc
- Creation date:
 - 2020-04-30
- The classes tested in this test are:
 - DROSKP

2.3.66 CAPITALINVESTMENTS DRO.TEST DROMKP SCENARIO

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_dromkp_scenarios_I.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_dromkp_scenario
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_dromkp_scenario
```

- Test Description:

- This test is aimed to check the distributionally robust optimization for Multiple Knapsack Problem, we only consider capital budget. In this test, `radius_ambiguity = 1.0`.
- Original Author:
 - wangc
- Creation date:
 - 2020-04-30
- The classes tested in this test are:
 - DROMKP

2.3.67 CAPITALINVESTMENTS DRO.TEST DROSKP MULTIPLE VARIATIONS

This test can be found at “`./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_droskp_multiple_variations.xml`”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_droskp_multiple_variations
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_droskp_multiple_var
```

- Test Description:
 - This test is aimed to test scenarios of multiple parameters using distributionally robust optimization. In this case, `radius_ambiguity = 0.0`. In other words, this problem is equivalent to the stochastic single knapsack problem.
- Original Author:
 - wangc
- Creation date:
 - 2020-06-01
- The classes tested in this test are:
 - DROSKP

2.3.68 CAPITALINVESTMENTS DRO.TEST DROSKP MULTIPLE VARIATIONS I

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_droskp_multiple_variations_I.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_droskp_multiple_variations_I
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_droskp_multiple_var
```

- Test Description:
 - This test is aimed to test scenarios of multiple parameters using distributionally robust optimization. In this case, $\text{radius_ambiguity} = 0.01$. However, we are using the same values for different scenarios of $\text{net_present_values}$. Thus, this problem is equivalent to droskp problem with single parameter variations.
- Original Author:
 - wangc
- Creation date:
 - 2020-06-01
- The classes tested in this test are:
 - DROSKP

2.3.69 CAPITALINVESTMENTS DRO.TEST DROSKP MULTIPLE VARIATIONS II

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/dro/test_droskp_multiple_variations_II.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/dro.test_droskp_multiple_variations_II
```

or

```
./run_framework_tests --re=CapitalInvestments/dro.test_droskp_multiple_var
```

- Test Description:
 - This test is aimed to test scenarios of multiple parameters using distributionally robust optimization. In this case, radius_ambiguity = 0.01. In this case, the net_present_values at the second scenario is reduced by 10the optimized max npv will be also reduced by 10
- Original Author:
 - wangc
- Creation date:
 - 2020-06-01
- The classes tested in this test are:
 - DROSKP

2.3.70 CAPITALINVESTMENTS CVAR.TEST CVAR MCKP SCENARIO I

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/cvar/test_cvar_mckp_scenario_I.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/cvar.test_cvar_mckp_scenario_I
```

or

```
./run_framework_tests --re=CapitalInvestments/cvar.test_cvar_mckp_scenario_I
```

- Test Description:
 - This test is aimed to check the CVaR optimization for In this test, risk_aversion = 0.1, confidence_level = 0.95.
- Original Author:
 - wangc
- Creation date:
 - 2020-07-09
- The classes tested in this test are:
 - CVaRMCKP

2.3.71 CAPITALINVESTMENTS CVAR.TEST CVAR MCKP SCENARIO II

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/cvar/test_cvar_mckp_scenario_II.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/cvar.test_cvar_mckp_scenario_II
```

or

```
./run_framework_tests --re=CapitalInvestments/cvar.test_cvar_mckp_scenario_II
```

- Test Description:
 - This test is aimed to check the CVaR optimization for In this test, risk_aversion = 1.0, confidence_level = 0.95.
- Original Author:
 - wangc
- Creation date:
 - 2020-07-09
- The classes tested in this test are:
 - CVaRMCKP

2.3.72 CAPITALINVESTMENTS CVAR.TEST DRO ADJUSTED USE CASE 2A I

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/cvar/test_cvar_adjusted_use_case_2a_I.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/cvar.test_dro_adjusted_use_case_2a_I
```

or

```
./run_framework_tests --re=CapitalInvestments/cvar.test_dro_adjusted_use_case_2a_I
```

- Test Description:

- This test is aimed to check the CVaR optimization for use case 2 for FY19 In this case, we only consider capital budget (OM is not included). In this test, risk_aversion = 0.01, confidence_level = 0.95

- Original Author:

- wangc

- Creation date:

- 2020-07-09

- The classes tested in this test are:

- CVaRMCKP

2.3.73 CAPITALINVESTMENTS CVAR.TEST DRO ADJUSTED USE CASE 2A

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/cvar/test_cvar_adjusted_use_case_2a_II.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/cvar.test_dro_adjusted_use_case_2a
```

or

```
./run_framework_tests --re=CapitalInvestments/cvar.test_dro_adjusted_use_ca
```

- Test Description:

- This test is aimed to check the CVaR optimization for use case 2 for FY19 In this case, we only consider capital budget (OM is not included). In this test, risk_aversion = 0.1, confidence_level = 0.95

- Original Author:

- wangc

- Creation date:

- 2020-07-09

- The classes tested in this test are:

- CVaRMCKP

2.3.74 CAPITALINVESTMENTS CVAR.TEST DRO ADJUSTED USE CASE 2A III

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/cvar/test_cvar_adjusted_use_case_2a_III.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/cvar.test_dro_adjusted_use_case_2a_III
```

or

```
./run_framework_tests --re=CapitalInvestments/cvar.test_dro_adjusted_use_c
```

- Test Description:
 - This test is aimed to check the CVaR optimization for use case 2 for FY19 In this case, we only consider capital budget (OM is not included). In this test, risk_aversion = 1.0, confidence_level = 0.95
- Original Author:
 - wangc
- Creation date:
 - 2020-07-09
- The classes tested in this test are:
 - CVaRMCKP

2.3.75 CAPITALINVESTMENTS CVAR.TEST CVAR SKP SCENARIO I

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/cvar/test_cvar_skp_scenario_I.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/cvar.test_cvar_skp_scenario_I
```

or

```
./run_framework_tests --re=CapitalInvestments/cvar.test_cvar_skp_scenario_I
```

- Test Description:

- This test is aimed to check the optimization of conditional value at risk for Single Knapsack Problem, we only consider the uncertainties in capital budget. In this test, risk_aversion = 0.01. This is combination of CVaR and expected NPV optimization.

- Original Author:

- wangc

- Creation date:

- 2020-07-08

- The classes tested in this test are:

- CVARSKP

2.3.76 CAPITALINVESTMENTS CVAR.TEST CVAR SKP SCENARIO II

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/cvar/test_cvar_skp_scenario_II.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/cvar.test_cvar_skp_scenario_II
```

or

```
./run_framework_tests --re=CapitalInvestments/cvar.test_cvar_skp_scenario_II
```

- Test Description:

- This test is aimed to check the CVaR optimization for Single Knapsack Problem, we only consider capital budget. In this test, risk_aversion = 1.0, and this test is equivalent to the pure CVaR optimization

- Original Author:

- wangc

- Creation date:

- 2020-07-09

- The classes tested in this test are:

- CVaRSKP

2.3.77 CAPITALINVESTMENTS CVAR.TEST CVAR MKP SCENARIO I

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/cvar/test_cvar_mkp_scenarios_I.xml”. This test can be called executing the following command:

```
./run_tests --re=CapitalInvestments/cvar.test_cvar_mkp_scenario_I
```

or

```
./run_framework_tests --re=CapitalInvestments/cvar.test_cvar_mkp_scenario_I
```

- Test Description:
 - This test is aimed to check the CVaR optimization for Multiple Knapsack Problem, we only consider capital budget. In this test, risk_aversion = 1.0, which is equivalent to the pure CVaR stochastic programming
- Original Author:
 - wangc
- Creation date:
 - 2020-07-09
- The classes tested in this test are:
 - CVaRMKP

2.3.78 LOGOS.LOGOS MKP GLPK

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/mkp/test_mkp_1.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_mkp_glpk
```

or

```
./run_framework_tests --re=Logos.logos_mkp_glpk
```

- Test Description:

- This test is aimed to check logos_mkp_glpk
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MultipleKnapsack

2.3.79 LOGOS.LOGOS MKP NO INDEX

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/mkp/test_mkp_noindex.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_mkp_no_index
```

or

```
./run_framework_tests --re=Logos.logos_mkp_no_index
```

- Test Description:
 - This test is aimed to check logos_mkp_no_index
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MultipleKnapsack

2.3.80 LOGOS.LOGOS MKP T

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/mkp/test_mkp_t.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_mkp_t
```

or

```
./run_framework_tests --re=Logos.logos_mkp_t
```

- Test Description:
 - This test is aimed to check logos_mkp_t
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MultipleKnapsack

2.3.81 LOGOS.LOGOS EXAMPLES P16

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/test_p16.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_p16
```

or

```
./run_framework_tests --re=Logos.logos_examples_p16
```

- Test Description:
 - This test is aimed to check logos_examples_p16
- Original Author:

- wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.82 LOGOS.LOGOS EXAMPLES P16 EXT

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/test_p16_ext.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_p16_ext
```

or

```
./run_framework_tests --re=Logos.logos_examples_p16_ext
```

- Test Description:
 - This test is aimed to check logos_examples_p16_ext
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.83 LOGOS.LOGOS EXAMPLES USE CASE 1A FY19

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_1a_fy19.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_1a_fy19
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_1a_fy19
```

- Test Description:
 - This test is aimed to check logos_examples_use_case_1a_fy19
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.84 LOGOS.LOGOS EXAMPLES USE CASE 1B FY19

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_1b_fy19.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_1b_fy19
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_1b_fy19
```

- Test Description:
 - This test is aimed to check logos_examples_use_case_1b_fy19
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.85 LOGOS.LOGOS EXAMPLES USE CASE 1C FY19

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_1c_fy19.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_1c_fy19
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_1c_fy19
```

- Test Description:
 - This test is aimed to check logos_examples_use_case_1c_fy19
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.86 LOGOS.LOGOS EXAMPLES USE CASE 2A FY19

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_2a_fy19.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_2a_fy19
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_2a_fy19
```

- Test Description:
 - This test is aimed to check logos_examples_use_case_2a_fy19

- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.87 LOGOS.LOGOS EXAMPLES USE CASE 2A FY19 CONSISTENT CONSTRAINT I

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_2a_fy19_consistent_constraint_I.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_2a_fy19_consistent_constraint_I
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_2a_fy19_consistent_constraint_I
```

- Test Description:
 - This test is aimed to check logos_examples_use_case_2a_fy19_consistent_constraint_I
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.88 LOGOS.LOGOS EXAMPLES USE CASE 2A FY19 CONSISTENT CONSTRAINT I II

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_2a_fy19_consistent_constraint_I_II.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_2a_fy19_consistent_constraint_I_II
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_2a_fy19_consistent_constraint_I_II
```

- Test Description:
 - This test is aimed to check `logos_examples_use_case_2a_fy19_consistent_constraint_I_II`
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.89 LOGOS.LOGOS EXAMPLES USE CASE 2A FY19 NO CONSISTENT CONSTRAINT

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_2a_fy19_no_consistent_constraint.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_2a_fy19_no_consistent_constraint
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_2a_fy19_no_consistent_constraint
```

- Test Description:

- This test is aimed to check `logos_examples_use_case_2a_fy19_no_consistent_constraint`
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.90 LOGOS.LOGOS EXAMPLES USE CASE 2B FY19 CONSISTENT CONSTRAINT I

This test can be found at “`./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_2b_fy19_consistent_constraint_I.xml`”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_2b_fy19_consistent_constraint
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_2b_fy19_consistent
```

- Test Description:
 - This test is aimed to check `logos_examples_use_case_2b_fy19_consistent_constraint_I`
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.91 LOGOS.LOGOS EXAMPLES USE CASE 2B FY19 CONSISTENT CONSTRAINT I II

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_2b_fy19_consistent_constraint_I_II.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_2b_fy19_consistent_constraint_I_II
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_2b_fy19_consistent_constraint_I_II
```

- Test Description:
 - This test is aimed to check `logos_examples_use_case_2b_fy19_consistent_constraint_I_II`
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.92 LOGOS.LOGOS EXAMPLES USE CASE 2B FY19 NO CONSISTENT CONSTRAINT

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_2b_fy19_no_consistent_constraint.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_2b_fy19_no_consistent_constraint
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_2b_fy19_no_consistent_constraint
```

- Test Description:

- This test is aimed to check `logos_examples_use_case_2b_fy19_no_consistent_constraint`
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.93 LOGOS.LOGOS EXAMPLES USE CASE 2C FY19 CONSISTENT CONSTRAINT I II

This test can be found at “`./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_2c_fy19_consistent_constraint_I_II.xml`”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_2c_fy19_consistent_constraint
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_2c_fy19_consistent
```

- Test Description:
 - This test is aimed to check `logos_examples_use_case_2c_fy19_consistent_constraint_I_II`
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.94 LOGOS.LOGOS EXAMPLES USE CASE 2D FY19 CONSISTENT CONSTRAINT I II

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_2d_fy19_consistent_constraint_I_II.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_2d_fy19_consistent_constraint_I_II
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_2d_fy19_consistent_constraint_I_II
```

- Test Description:
 - This test is aimed to check logos_examples_use_case_2d_fy19_consistent_constraint_I_II
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.95 LOGOS.LOGOS EXAMPLES USE CASE 3A FY19 CONSISTENT CONSTRAINT I II

This test can be found at “./raven/plugins/LOGOS/tests/CapitalInvestments/examples/use_case_3a_fy19_consistent_constraint_I_II.xml”. This test can be called executing the following command:

```
./run_tests --re=Logos.logos_examples_use_case_3a_fy19_consistent_constraint_I_II
```

or

```
./run_framework_tests --re=Logos.logos_examples_use_case_3a_fy19_consistent_constraint_I_II
```

- Test Description:

- This test is aimed to check logos_examples_use_case_3a.fy19_consistent_constraint.I.II
- Original Author:
 - wangc
- Creation date:
 - 2019-11-18
- The classes tested in this test are:
 - MCKP

2.3.96 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR INTERFACEDPOSTPROCESSOR

This test can be found at “./raven/plugins/ExamplePlugin/tests/test_interfacedPP.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/interfacedPostProcessor
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor/interfacedPostProcessor
```

- Test Description:
 - Test of the interfaced post-processor interface
- Original Author:
 - mandd
- Creation date:
 - 2019-01-16
- The classes tested in this test are:
 - InterfacedPostProcessor

2.3.97 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR INTERFACEDPOSTPROCESSORPARALLEL

This test can be found at “./raven/plugins/ExamplePlugin/tests/test_interfacedPP_parallel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/interfacedPostProcessorParallel
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor/interfacedPostProcessorParallel
```

- Test Description:
 - Test of the interfaced post-processor interface performed in parallel
- Original Author:
 - mandd
- Creation date:
 - 2019-01-16
- The classes tested in this test are:
 - InterfacedPostProcessor

2.3.98 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR INTERFACEDPOSTPROCESSOR POINTSET

This test can be found at “./raven/plugins/ExamplePlugin/tests/test_interfacedPP_pointset.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/interfacedPostProcessorPointSet
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor/interfacedPostProcessorPointSet
```

- Test Description:
 - Test of the interfaced post-processor interface to deal with pointSet

- Original Author:
 - mandd
- Creation date:
 - 2019-01-16
- The classes tested in this test are:
 - InterfacedPostProcessor

2.3.99 PRODUCTIONFLEX

This test can be found at “./raven/plugins/HERON/tests/integration_tests/workflows/production_flex/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=ProductionFlex
```

or

```
./run_framework_tests --re=ProductionFlex
```

- Test Description:
 - Tests including a consume-and-produce unit, and the pyomo dispatcher. Uses an ARMA for “electr_flex” pricing. May be able to serve as a timing test in the future. “steamer” produces steam which is consumed by “generator” to produce electricity. This electricity can then be sold at the “electr_market” at a profit or “electr_flex” at a variable profit/cost.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-06-15
- The classes tested in this test are:
 - HERON

2.3.100 STORAGE

This test can be found at “./raven/plugins/HERON/tests/integration_tests/workflows/storage/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=storage
```

or

```
./run_framework_tests --re=storage
```

- Test Description:
 - Tests including a storage unit as part of a flexible analysis case. Extends from production_flex case.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-09-28
- The classes tested in this test are:
 - HERON

2.3.101 PRODUCTION

This test can be found at “./raven/plugins/HERON/tests/integration_tests/workflows/production_flex_opt/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=production
```

or

```
./run_framework_tests --re=production
```

- Test Description:

- Demonstrates using an optimization strategy on a simple system, instead of a sweep strategy. A steam source feeds a generator, which then sells electricity to a low-capacity high-value market and a high-capacity negative-value market. The size of the steam source and high-capacity market are optimized. The market size is irrelevant; the optimal steam source size is equal to the high-value market size.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-06-15
- The classes tested in this test are:
 - HERON

2.3.102 VALIDATOR

This test can be found at “./raven/plugins/HERON/tests/integration_tests/mechanics/validator/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=validator
```

or

```
./run_framework_tests --re=validator
```

- Test Description:
 - Tests using a “validator” to modify behavior of a dispatch optimizer. Uses the Example validator.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-09-14
- The classes tested in this test are:
 - HERON

2.3.103 MINDEMAND

This test can be found at “./raven/plugins/HERON/tests/integration_tests/mechanics/min_demand/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=MinDemand
```

or

```
./run_framework_tests --re=MinDemand
```

- Test Description:
 - Tests having a minimum level for a demand component.
- Original Author:
 - E. Worsham
- Creation date:
 - 2020-10-15
- The classes tested in this test are:
 - HERON

2.3.104 STORAGE

This test can be found at “./raven/plugins/HERON/tests/integration_tests/mechanics/pyomo_options/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=storage
```

or

```
./run_framework_tests --re=storage
```

- Test Description:

- Tests including a storage unit as part of a flexible analysis case. Extends from work-flows/storage case. Note with the shorter rolling window, the optimizer cannot make as optimal decisions as with the full window, resulting in differences especially in the 100 steam production case.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-09-28
- The classes tested in this test are:
 - HERON

2.3.105 LABELS

This test can be found at “./raven/plugins/HERON/tests/integration_tests/mechanics/labels/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=Labels
```

or

```
./run_framework_tests --re=Labels
```

- Test Description:
 - Tests including case-info user defined labels. Extends from production_flex.
- Original Author:
 - dylanjm
- Creation date:
 - 2020-10-12
- The classes tested in this test are:
 - HERON

2.3.106 DEBUGMODE

This test can be found at “./raven/plugins/HERON/tests/integration_tests/mechanics/debug_mode/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=DebugMode
```

or

```
./run_framework_tests --re=DebugMode
```

- Test Description:
 - Tests a debug mode of operation, where a single outer runs a single sample of inner and outputs the optimized dispatch.
- Original Author:
 - talbpaul
- Creation date:
 - 2021-02-22
- The classes tested in this test are:
 - HERON

2.3.107 CASHFLOWS

This test can be found at “./raven/plugins/HERON/tests/integration_tests/mechanics/cashflows/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=Cashflows
```

or

```
./run_framework_tests --re=Cashflows
```

- Test Description:

- Tests various kinds of cashflows
- Original Author:
 - talbpaul
- Creation date:
 - 2020-10-16
- The classes tested in this test are:
 - HERON

2.3.108 ROMSOURCE

This test can be found at “./raven/plugins/HERON/tests/integration_tests/mechanics/ROM_source/heron_input.xml”. This test can be called executing the following command:

```
./run_tests --re=ROMSource
```

or

```
./run_framework_tests --re=ROMSource
```

- Test Description:
 - Uses a ROM as a data source.
- Original Author:
 - talbpaul
- Creation date:
 - 2021-05-11
- The classes tested in this test are:
 - HERON

2.3.109 ARMA SINE

This test can be found at “./raven/plugins/HERON/tests/integration_tests/ARMA/train_sine.xml”. This test can be called executing the following command:

```
./run_tests --re=ARMA_sine
```

or

```
./run_framework_tests --re=ARMA_sine
```

- Test Description:
 - This trains a non-stochastic sine function for use in HERON tests.
- Original Author:
 - gaira
- Creation date:
 - 2020-05-12
- The classes tested in this test are:
 - SupervisedLearning.ARMA

2.3.110 ARMA SINE

This test can be found at “./raven/plugins/SRAW/tests/sraw_capital_budgeting.xml”. This test can be called executing the following command:

```
./run_tests --re=ARMA_sine
```

or

```
./run_framework_tests --re=ARMA_sine
```

- Test Description:
 - This trains a non-stochastic sine function for use in HERON tests.
- Original Author:

- gaira
- Creation date:
 - 2020-05-12
- The classes tested in this test are:
 - SupervisedLearning.ARMA

2.3.111 FRAMEWORK PCARESPONSESURFACE

This test can be found at “./raven/tests/framework/test_pca_responseSurface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pcaResponseSurface
```

or

```
./run_framework_tests --re=framework/pcaResponseSurface
```

- Test Description:
 - Tests responseSurface sampler in connection with PCA.
- Original Author:
 - wangc
- Creation date:
 - 2015-12-16
- The classes tested in this test are:
 - Samplers.responseSurface

2.3.112 FRAMEWORK.EXTERNAL XML

This test can be found at “./raven/tests/framework/test_External_XML.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.external_xml
```

or

```
./run_framework_tests --re=framework.external_xml
```

- Test Description:
 - This test is aimed to check the capability in RAVEN to load external XML files as part of the input file. Indeed, allows the user to inject in the input files XML blocks defined in external files
- Original Author:
 - wangc
- Creation date:
 - 2015-07-22
- The classes tested in this test are:
 - Simulation.ExternalXML
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 2. revision info:
 - author : talbpaul
 - date : 2016-04-26
 - description: added check for pre-existing backup files when validating
 3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 4. revision info:
 - author : talbpaul
 - date : 2018-03-26
 - description: Nested ExternalXML nodes in OutStream

2.3.113 FRAMEWORK.TEST MULTI TARGET ROM

This test can be found at “./raven/tests/framework/test_multi_target_rom.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.test_multi_target_rom
```

or

```
./run_framework_tests --re=framework.test_multi_target_rom
```

- Test Description:
 - This test is aimed to test the capability of RAVEN to train ROMs that can predict multiple targets at the same time (multiple FOMs)
- Original Author:
 - alfoa
- Creation date:
 - 2014-11-30
- The classes tested in this test are:
 - Steps.RomTrainer, Models.ROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 2. revision info:
 - author : mandd
 - date : 2015-04-20
 - description: Merge remote-tracking branch 'origin/devel' into mandd/DataRename
 3. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects

4. revision info:
 - author : alfoa
 - date : 2015-06-21
 - description: modified Names + added new capabilities and flexibility in DataObjects + added options block. Modified XSD schema and manual to reflect the modifications
5. revision info:
 - author : alfoa
 - date : 2015-09-12
 - description: removed syntax inconsistency with respect standards for Samplers (underscores instead of camelBack) + created conversion script
6. revision info:
 - author : cogljj
 - date : 2015-10-13
 - description: Updating test_multi_target_rom to use external models.
7. revision info:
 - author : cogljj
 - date : 2015-11-17
 - description: Updating to work with scikit-learn 0.17. In the new version of sklearn the rom can not use a classifier anymore.
8. revision info:
 - author : maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History.
9. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
10. revision info:
 - author : alfoa
 - date : 2017-12-17
 - description: Modified for adapting to new DataObject structure

2.3.114 FRAMEWORK.TEST ROM TRAIN FROM ALREADY DUMPED HDF5

This test can be found at “./raven/tests/framework/test_rom_train_from_already_dumped_HDF5.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.test_rom_train_from_already_dumped_HDF5
```

or

```
./run_framework_tests --re=framework.test_rom_train_from_already_dumped_HDF5
```

- Test Description:
 - This test is aimed to test the capability of RAVEN to train ROMs based on the pre-generated data sets (HDF5)
- Original Author:
 - alfoa
- Creation date:
 - 2014-02-26
- The classes tested in this test are:
 - Steps.RomTrainer, Models.ROM, Databases.HDF5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2014-03-06
 - description: changed name of DataBase handling, modified all tests were using it, improved Step output handling etc r25347
 2. revision info:
 - author : maljdan
 - date : 2015-06-16
 - description: Adding steps to the XSD, and fixing the input files to pass the validation. Currently, using sequences.
 3. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
 4. revision info:

- author : alfoa
 - date : 2015-06-21
 - description: modified Names + added new capabilities and flexibility in DataObjects + added options block. Modified XSD schema and manual to reflect the modifications
5. revision info:
- author : cogljj
 - date : 2015-10-13
 - description: Converting test_rom_train_from_already_dumped_HDF5 to use external model.
6. revision info:
- author : cogljj
 - date : 2015-11-17
 - description: Updating to work with scikit-learn 0.17. In the new version of sklearn the rom can not use a classifier anymore.
7. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
8. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
9. revision info:
- author : talbpaul
 - date : 2017-07-10
 - description: Fixed location of database to be specified relative to working directory
10. revision info:
- author : alfoa
 - date : 2017-12-18
 - description: Adapted for new DataObject structure

2.3.115 FRAMEWORK.TESTRESPONSESURFACEDESIGNS

This test can be found at “./raven/tests/framework/test_ResponseSurfaceDesign_Sampler.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.testResponseSurfaceDesigns
```

or

```
./run_framework_tests --re=framework.testResponseSurfaceDesigns
```

- Test Description:
 - This test is aimed to check the capability in RAVEN to employ a ResponseSurfaceDesign sampling strategy. Since the goal of the test is to testify that the Grid sampling strategy is functional, a Dummy model is used. Both available Response Surface design strategies are tested (BoxBehnken, CentralComposite)
- Original Author:
 - alfoa
- Creation date:
 - 2014-12-06
- The classes tested in this test are:
 - Sampler.ResponseSurfaceDesign
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2015-02-04
 - description: added algorithm_type in tests and fixed a bug
 2. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 3. revision info:
 - author : alfoa
 - date : 2015-05-18
 - description: Closes #167
 4. revision info:

- author : alfoa
 - date : 2015-05-18
 - description: Closes #169
5. revision info:
- author : alfoa
 - date : 2015-05-29
 - description: finalized all the samplers
6. revision info:
- author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
7. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
8. revision info:
- author : talbpaul
 - date : 2016-04-26
 - description: added check for pre-existing backup files when validating
9. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.116 FRAMEWORK.TESTGRIDWITHCONSTANTS

This test can be found at “./raven/tests/framework/test_Grid_Sampler_with_constants.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.testGridWithConstants
```

or

```
./run_framework_tests --re=framework.testGridWithConstants
```

- Test Description:

- This test is aimed to check the capability of RAVEN to input constant variables values. This test is valid to demonstrate this capability for any Sampler in RAVEN. In addition, it shows how the constant variables can be used in conjunction with a function.
- Original Author:
 - alfoa
- Creation date:
 - 2017-04-05
- The classes tested in this test are:
 - Sampler.Grid
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-04-24
 - description: added a function to show how the constant variables can be used in conjunction with a function
 2. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.117 FRAMEWORK.TESTLHS

This test can be found at “./raven/tests/framework/test_LHS_Sampler.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.testLHS
```

or

```
./run_framework_tests --re=framework.testLHS
```

- Test Description:
 - This test is aimed to check the functionality of the Stratified sampling. In order to check this sampling strategy a Model of type Dummy.

- Original Author:
 - crisr
- Creation date:
 - 2013-10-15
- The classes tested in this test are:
 - Samplers.Stratified, Models.Dummy, Steps.MultiRun
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2014-01-21
 - description: fixed tests, added new capability in OutStreamPrint + modified check_output test, bug fixes in Datas.py and Steps... Deletede Plotting Step... Not needed SVN r24086
 2. revision info:
 - author : alfoa
 - date : 2015-03-04
 - description: modified batch sizes because sometimes, if we run the tests in parallel, the order of values in csv can be different
 3. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 4. revision info:
 - author : alfoa
 - date : 2015-04-24
 - description: From LHS to Stratified. Closes #130
 5. revision info:
 - author : alfoa
 - date : 2015-05-18
 - description: Closes #167
 6. revision info:
 - author : alfoa
 - date : 2015-05-18

- description: Closes #169
7. revision info:
- author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
8. revision info:
- author : maljdan
 - date : 2015-08-20
 - description: Fixing a bug associated with the grid construction used by the LHS sampler. (See issue #266)
9. revision info:
- author : wangc
 - date : 2015-09-10
 - description: update validate_xml.sh, convert some test inputs into something mostly RAVEN-preferred
10. revision info:
- author : alfoa
 - date : 2015-09-12
 - description: removed syntax inconsistency with respect standards for Samplers (underscores instead of camelBack) + created conversion script
11. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
12. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.118 FRAMEWORK.TESTEXTERNALMODELRESEED

This test can be found at “./raven/tests/framework/test_external_reseed.xml”.
This test can be called executing the following command:

```
./run_tests --re=framework.testExternalModelReseed
```


or

```
./run_framework_tests --re=framework.testExternalModelReseed
```

- Test Description:
 - This test is aimed to test the capability of the random-based sampling strategies (e.g. MonteCarlo, Stratified, etc.) to change the seeding of the random number generator every time a new realization is requested.
- Original Author:
 - alfoa
- Creation date:
 - 2015-01-26
- The classes tested in this test are:
 - Sampler.MonteCarlo
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 2. revision info:
 - author : alfoa
 - date : 2015-04-21
 - description: Closes #122
 3. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
 4. revision info:
 - author : alfoa
 - date : 2015-09-12
 - description: removed syntax inconsistency with respect standards for Samplers (underscores instead of camelBack) + created conversion script

5. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

6. revision info:

- author : talbpaul
- date : 2016-04-26
- description: added check for pre-existing backup files when validating

7. revision info:

- author : maljdan
- date : 2016-05-20
- description: Updating the test cases to remove references to Point or History.

8. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.3.119 FRAMEWORK.TEST CUSTOM MODE

This test can be found at “./raven/tests/framework/test_custom_mode.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.test_custom_mode
```

or

```
./run_framework_tests --re=framework.test_custom_mode
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to load external Custom dispatching recepies. RunInfo.CustomMode.
- Original Author:
 - coglj
- Creation date:

- 2014-04-02
- The classes tested in this test are:
 - JobHandler.ExternalRunner
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 2. revision info:
 - author : alfoa
 - date : 2015-05-18
 - description: Closes #167
 3. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
 4. revision info:
 - author : alfoa
 - date : 2016-04-27
 - description: New subdirectories structure
 5. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.120 FRAMEWORK.TEST XML DIFFER

This test can be found at “./raven/tests/framework/TestDiffer/TestXMLDiffer.py”. This test can be called executing the following command:

```
./run_tests --re=framework.test_xml_differ
```

or

```
./run_framework_tests --re=framework.test_xml_differ
```

- Test Description:
 - This test is aimed to check the xml differ program
- Original Author:
 - cogljj
- Creation date:
 - 2016-10-21
- The classes tested in this test are:
 - None
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.121 FRAMEWORK STOCHPOLYINTERPTEST

This test can be found at “./raven/tests/framework/test_stochpoly_interp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/stochPolyInterpTest
```

or

```
./run_framework_tests --re=framework/stochPolyInterpTest
```

- Test Description:
 - This test checks the use of the ”interpolation” blocks for the SCgPC methodology.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:
 - Samplers.SparseGridCollocation,SupervisedLearning.GaussPolynomialROM

2.3.122 FRAMEWORK.ND EXTERNAL LHS

This test can be found at “./raven/tests/framework/test_simple_ND_external_LHS.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.ND_external_LHS
```

or

```
./run_framework_tests --re=framework.ND_external_LHS
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to handle ND probability density functions (distributions), when a Stratified sampling strategy is performed. In this case, the capability to use a globalGrid specification, when the discretization is performed in CDF.
- Original Author:
 - mandd
- Creation date:
 - 2015-03-04
- The classes tested in this test are:
 - Distributions.NDInverseWeight, Distributions.NDCartesianSpline, Samplers.Stratified
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 2. revision info:
 - author : alfoa
 - date : 2015-04-24
 - description: From LHS to Stratified. Closes #130
 3. revision info:
 - author : alfoa

- date : 2015-05-28
 - description: fixed Stratified Sampler bug (=¿ regolding) +
4. revision info:
- author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
5. revision info:
- author : alfoa
 - date : 2015-09-12
 - description: removed syntax inconsistency with respect standards for Samplers (underscores instead of camelBack) + created conversion script
6. revision info:
- author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
7. revision info:
- author : wangc
 - date : 2015-10-22
 - description: fix several bugs inside stratified sampler, a test is added to prevent the bugs, and xml output file is added for the testing to prevent the bugs
8. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
9. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.123 FRAMEWORK.ND EXTERNAL GRID VALUE

This test can be found at “./raven/tests/framework/test_simple_ND_external_grid_value.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.ND_external_grid_value
```

or

```
./run_framework_tests --re=framework.ND_external_grid_value
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to handle ND probability density functions (distributions), when a Grid sampling strategy is performed. In this case, the capability to construct marginal distributions (for each uncertainties of the ND distribution domain), when the discretization is performed in VALUE.
- Original Author:
 - mandd
- Creation date:
 - 2015-03-04
- The classes tested in this test are:
 - Distributions.NDInverseWeight, Distributions.NDCartesianSpline, Samplers.Grid
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 2. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
 3. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
 4. revision info:
 - author : wangc
 - date : 2015-09-30
 - description: improve efficiency when calculate the SampledVarsPb with N-Dimensional PDF, fix the issue #298

5. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

6. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.3.124 FRAMEWORK.ND EXTERNAL GRID CDF

This test can be found at “./raven/tests/framework/test_simple_ND_external_grid_cdf.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.ND_external_grid_cdf
```

or

```
./run_framework_tests --re=framework.ND_external_grid_cdf
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to handle ND probability density functions (distributions), when a Grid sampling strategy is performed. In this case, the capability to construct marginal distributions (for each uncertainties of the ND distribution domain), when the discretization is performed in CDF.
- Original Author:
 - mandd
- Creation date:
 - 2015-03-04
- The classes tested in this test are:
 - Distributions.NDInverseWeight, Distrubtions.NDCartesianSpline, Samplers.Grid
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : mandd
 - date : 2015-03-09
 - description: test fixes
2. revision info:
- author : mandd
 - date : 2015-03-09
 - description: test fixes
3. revision info:
- author : mandd
 - date : 2015-03-09
 - description: fix tests
4. revision info:
- author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
5. revision info:
- author : senrs
 - date : 2015-05-18
 - description: update the test cases
6. revision info:
- author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
7. revision info:
- author : talbpaul
 - date : 2015-07-06
 - description: standardization of tests
8. revision info:
- author : talbpaul
 - date : 2015-07-06
 - description: Revert "standardization of tests" This reverts commit 68099325e8daba0f756179a20b
9. revision info:
- author : talbpaul
 - date : 2015-07-06

- description: updated tests, added script
10. revision info:
 - author : talbpaul
 - date : 2015-07-07
 - description: updated to restrict partial-node comments
 11. revision info:
 - author : talbpaul
 - date : 2015-07-07
 - description: standardized tests
 12. revision info:
 - author : talbpaul
 - date : 2015-07-09
 - description: tests pass, except LSIntegral needs regolding
 13. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
 14. revision info:
 - author : wangc
 - date : 2015-09-30
 - description: improve efficiency when calculate the SampledVarsPb with N-Dimensional PDF, fix the issue #298
 15. revision info:
 - author : wangc
 - date : 2015-09-30
 - description: add new tests for the issue #298
 16. revision info:
 - author : alfoa
 - date : 2015-10-06
 - description: modified all the other files
 17. revision info:
 - author : alfoa
 - date : 2015-10-06
 - description: final modifications
 18. revision info:

- author : alfoa
 - date : 2015-10-06
 - description: Merge branch 'devel' of hpcgitlab.inl.gov:idaholab/raven into wangc/-fix_bug
19. revision info:
- author : alfoa
 - date : 2015-10-15
 - description: merged devel and resolved conflicts
20. revision info:
- author : mandd
 - date : 2015-11-04
 - description: edits
21. revision info:
- author : mandd
 - date : 2015-11-06
 - description: edits
22. revision info:
- author : mandd
 - date : 2015-11-17
 - description: final merging with devel
23. revision info:
- author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
24. revision info:
- author : mandd
 - date : 2016-02-11
 - description: merged with devel
25. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
26. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.125 FRAMEWORK.ND TEST MC MVN

This test can be found at “./raven/tests/framework/test_simple_ND_external_MC_MVN.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.ND_test_MC_MVN
```

or

```
./run_framework_tests --re=framework.ND_test_MC_MVN
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to handle MultivariateNormal probability density functions (distributions), when a MonteCarlo sampling strategy is performed.
- Original Author:
 - mandd
- Creation date:
 - 2015-04-15
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers.MonteCarlo
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
 2. revision info:
 - author : wangc
 - date : 2015-07-02
 - description: nd multivariate distribution improvement
 3. revision info:
 - author : maljdan
 - date : 2016-04-06

- description: Updating test cases to reflect the changes to the user input.

4. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

5. revision info:

- author : wangc
- date : 2017-12-20
- description: convert test to use the new DataObjects with the new structure of basic statistic

2.3.126 FRAMEWORK.DISTS VARS

This test can be found at “./raven/tests/framework/test_distribution_combination.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.dists_vars
```

or

```
./run_framework_tests --re=framework.dists_vars
```

- Test Description:
 - This test is aimed to check the capability in RAVEN to combine 1Dimensional and NDimensional probability density functions in the same sampling strategy. In this test a NDimensional distribution (Custom) is used in conjunction with 3 1Dimensional Exponential distributions, in a MonteCarlo sampling strategy.
- Original Author:
 - mandd
- Creation date:
 - 2015-05-13
- The classes tested in this test are:
 - Distributions.Exponential, Distributions.NDCartesianSpline, Sampler.MonteCarlo
- Since the creation of this test, the following main revisions have been performed:

1. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
2. revision info:
 - author : maljdan
 - date : 2015-06-24
 - description: Adding DataObjects and fixing Distributions in the XSD.
3. revision info:
 - author : alfoa
 - date : 2015-09-12
 - description: removed syntax inconsistency with respect standards for Samplers (underscores instead of camelBack) + created conversion script
4. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
5. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
6. revision info:
 - author : maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History.
7. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
8. revision info:
 - author : alfoa
 - date : 2017-12-20
 - description: Added seed and added additional ND distribution.

2.3.127 FRAMEWORK.REDUNDANTINPUTS

This test can be found at “./raven/tests/framework/test_redundant_inputs.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.redundantInputs
```

or

```
./run_framework_tests --re=framework.redundantInputs
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to treat redundant input variables. This test shows how some of the variables defined in the Samplers, can be associated to Functions (External) instead of Distributions. In this way, the user can “sample” the variable as combination of the other variables.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-06-25
- The classes tested in this test are:
 - Samplers.Sampler, Functions.External
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2015-09-22
 - description: fix the bug #296
 2. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 3. revision info:
 - author : alfoa

- date : 2017-01-21
- description: Adding this test description.

4. revision info:

- author : alfoa
- date : 2019-03-07
- description: Modified syntax in Functions as for issue #934

2.3.128 FRAMEWORK.REDUNDANTINPUTSSCGPC

This test can be found at “./raven/tests/framework/test_redundant_scgpc.xml”.
 This test can be called executing the following command:

```
./run_tests --re=framework.redundantInputsSCgPC
```

or

```
./run_framework_tests --re=framework.redundantInputsSCgPC
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to treat redundant input variables, when the Sampler of type “SparseGridCollocation” is used. This test shows how some of the variables defined in the Sampler, can be associated to Functions (External) instead of Distributions. In this way, the user can “sample” the variable as combination of the other variables.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-01-07
- The classes tested in this test are:
 - Samplers.SparseGridCollocation, Functions.External
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul

- date : 2016-01-07
 - description: Tests updated
2. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
3. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
4. revision info:
- author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.129 FRAMEWORK.REDUNDANTINPUTSSOBOL

This test can be found at “./raven/tests/framework/test_redundant_sobol.xml”.
 This test can be called executing the following command:

```
./run_tests --re=framework.redundantInputsSobol
```

or

```
./run_framework_tests --re=framework.redundantInputsSobol
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to treat redundant input variables, when the Sampler of type “Sobol” is used. This test shows how some of the variables defined in the Sampler, can be associated to Functions (External) instead of Distributions. In this way, the user can “sample” the variable as combination of the other variables.
- Original Author:
 - talbpaul
- Creation date:

- 2016-01-07
- The classes tested in this test are:
 - Samplers.Sobol, Functions.External
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2016-01-15
 - description: Rename step in sobol test to avoid directry name collision. Closes #400. Both test_redundant_scgpc and test_redundant_sobol were using the directory RedundantInputs/sim_py_SC which could cause test failures. This renames the one that redundant_sobol uses.
 2. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 4. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.130 FRAMEWORK.FAILRUNSMC

This test can be found at “./raven/tests/framework/test_failruns_MC.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.failrunsMC
```

or

```
./run_framework_tests --re=framework.failrunsMC
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to identify failures (Model crashes in some realizations) when a sampling strategy is employed.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-08-25
- The classes tested in this test are:
 - Steps.MultiRun
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2015-09-12
 - description: removed syntax inconsistency with respect standards for Samplers (underscores instead of camelBack) + created conversion script
 2. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifing external modules to use relative to working directory.
 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 4. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.131 FRAMEWORK.NDGRIDPROBABILITYWEIGHTCDF

This test can be found at “./raven/tests/framework/test_simple_ND_grid_probabilityWeightcdf.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.NDGridProbabilityWeightCDF
```

or

```
./run_framework_tests --re=framework.NDGridProbabilityWeightCDF
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to handle ND probability density functions (distributions), when a Grid sampling strategy is performed. In this case, the capability to construct marginal distributions (for each uncertainties of the ND distribution domain), when the discretization is performed in CDF.
- Original Author:
 - wangc
- Creation date:
 - 2015-09-30
- The classes tested in this test are:
 - Distributions.NDInverseWeight, Distributions.NDCartesianSpline, Samplers.Grid
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2015-10-15
 - description: merged devel and resolved conflicts
 2. revision info:
 - author : mandd
 - date : 2015-11-06
 - description: edits
 3. revision info:
 - author : mandd

- date : 2015-11-17
 - description: final merging with devel
4. revision info:
- author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
5. revision info:
- author : mandd
 - date : 2016-02-11
 - description: merged with devel
6. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
7. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.132 FRAMEWORK.NDGRIDPROBABILITYWEIGHTVALUE

This test can be found at “./raven/tests/framework/test_simple_ND_grid_probabilityWeightValue.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.NDGridProbabilityWeightValue
```

or

```
./run_framework_tests --re=framework.NDGridProbabilityWeightValue
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to handle ND probability density functions (distributions), when a Grid sampling strategy is performed. In this case, the capability to construct marginal distributions (for each uncertainties of the ND distribution domain), when the discretization is performed in VALUE.
- Original Author:

- wangc
- Creation date:
 - 2015-09-30
- The classes tested in this test are:
 - Distributions.NDInverseWeight, Distrubtions.NDCartesianSpline, Samplers.Grid
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 2. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.133 FRAMEWORK.LHSVARIABLES

This test can be found at “./raven/tests/framework/test_LHS_variables.xml”.
 This test can be called executing the following command:

```
./run_tests --re=framework.LHSVariables
```

or

```
./run_framework_tests --re=framework.LHSVariables
```

- Test Description:
 - This test is aimed to check the capability in RAVEN to employ a Stratified sampling strategy (LHS- equally spaced in CDF). Since the goal of the test is to testify that the Stratified sampling strategy is functional, a Dummy model is used.

- Original Author:
 - wangc
- Creation date:
 - 2015-10-22
- The classes tested in this test are:
 - Sampler.Stratified
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2015-10-29
 - description: Moving comment to third line and removing #
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 4. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.134 FRAMEWORK FAIL CSV

This test can be found at “./raven/tests/framework/test_simple_fail_csv.xml”.
 This test can be called executing the following command:

```
./run_tests --re=framework/fail_csv
```

or

```
./run_framework_tests --re=framework/fail_csv
```

- Test Description:
 - Tests the test harness by checking that differences in the csv file cause the test to fail (but it passes because expected_fail is used in the tests file). If the CSV check passes, then this will fail the test.
- Original Author:
 - cogljj
- Creation date:
 - 2016-04-14
- The classes tested in this test are:
 - TestHarness.testers.RavenFramework

2.3.135 FRAMEWORK FAIL XML

This test can be found at “./raven/tests/framework/test_simple_fail_xml.xml”.
 This test can be called executing the following command:

```
./run_tests --re=framework/fail_xml
```

or

```
./run_framework_tests --re=framework/fail_xml
```

- Test Description:
 - Tests the test harness by checking that differences in the xml file cause the test to fail (but it passes because expected_fail is used in the tests file). If the XML check passes, then this will fail the test.
- Original Author:
 - cogljj
- Creation date:
 - 2016-04-14
- The classes tested in this test are:
 - TestHarness.testers.XMLDiff,TestHarness.testers.RavenFramework

2.3.136 FRAMEWORK.SIMULATIONTAGS

This test can be found at “./raven/tests/framework/test_sim_tags.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.SimulationTags
```

or

```
./run_framework_tests --re=framework.SimulationTags
```

- Test Description:
 - This test is aimed to check the functionality of the options that can be defined in the Simulation block (attributes), such as “color”, “printTimeStamps” and “verbosity”.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-02-18
- The classes tested in this test are:
 - Simulation
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.137 FRAMEWORK.TESTSTRATIFIEDLARGESIZE

This test can be found at “./raven/tests/framework/test_stratified_dummy_model_large_grid_size.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.testStratifiedLargeSize
```

or

```
./run_framework_tests --re=framework.testStratifiedLargeSize
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to perform a Stratified Sampling strategy of large size [(16 uncertainties and 2 nodes each) and (16 uncertainties and 161 nodes each)]. An external model is used, the results are stored the results into a Database of type HDF5 and Dataobjects of type PointSet. In addition, it prints the results (contained in the DataObjects) in a CSV file (OutStreams of type Print)
- Original Author:
 - alfoa
- Creation date:
 - 2016-04-11
- The classes tested in this test are:
 - OutStreams.Print, DataObjects.PointSet, Databases.HDF5, Steps.MultiRun, Samplers.Stratified
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-04-13
 - description: new syntax for OutStreamManger -> OutStreams
 2. revision info:
 - author : talbpaul
 - date : 2016-04-26
 - description: added check for pre-existing backup files when validating
 3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.138 FRAMEWORK.CUSTOM1D

This test can be found at “./raven/tests/framework/test_distributionCustom1D.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.custom1D
```

or

```
./run_framework_tests --re=framework.custom1D
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to handle custom probability density functions (distributions).
- Original Author:
 - mandd
- Creation date:
 - 2016-08-08
- The classes tested in this test are:
 - Distributions.Custom1D
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.139 FRAMEWORK ERRORCHECKS.MISSINGSTEPS

This test can be found at “./raven/tests/framework/ErrorChecks/test_noSteps.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ErrorChecks.missingSteps
```

or

```
./run_framework_tests --re=framework/ErrorChecks.missingSteps
```

- Test Description:
 - This test is aimed to check the functionality of RAVEN to error out in case some input inconsistencies are found. In this case, the error in case of no Step is tested.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-02-09
- The classes tested in this test are:
 - Steps.MultiRun
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-04-26
 - description: Updated test to accept new “overwrite” attribute in HDF5
 2. revision info:
 - author : alfoa
 - date : 2016-04-27
 - description: New subdirectories structure
 3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.140 FRAMEWORK ERRORCHECKS.MVNNOTSQUARE

This test can be found at “./raven/tests/framework/ErrorChecks/test_MVN_not_square.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ErrorChecks.MVNnotSquare
```

or

```
./run_framework_tests --re=framework/ErrorChecks.MVNnotSquare
```

- Test Description:
 - This test is aimed to check the functionality of RAVEN to error out in case some input inconsistencies are found. In this case, the fact that the MultiVariate distribution errors out when it is not square
- Original Author:
 - talbpaul
- Creation date:
 - 2016-07-14
- The classes tested in this test are:
 - Distributions.MultivariateNormal
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.141 FRAMEWORK ERRORCHECKS.MVNBADDIMS

This test can be found at “./raven/tests/framework/ErrorChecks/test_MVN_bad_dims.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ErrorChecks.MVNbadDims
```

or

```
./run_framework_tests --re=framework/ErrorChecks.MVNbadDims
```

- Test Description:

- This test is aimed to check the functionality of RAVEN to error out in case some input inconsistencies are found. In this case, the fact that the MultiVariate distribution errors out when not all the dimensions of the MultiVariate are used in the sampling strategy.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-07-14
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers.MonteCarlo
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.142 FRAMEWORK ERRORCHECKS.BADHISTORY

This test can be found at “./raven/tests/framework/ErrorChecks/loadBadHistory.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ErrorChecks.badHistory
```

or

```
./run_framework_tests --re=framework/ErrorChecks.badHistory
```

- Test Description:
 - This test is aimed to check the functionality of RAVEN to error out in case some input inconsistencies are found. In this case, the data contained in “badHistorySet.csv” is faulty and the code (HistorySet) needs to error out.
- Original Author:
 - maljovec

- Creation date:
 - 2017-07-21
- The classes tested in this test are:
 - Steps.IOSStep, DataObjects.HistorySet
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.143 FRAMEWORK ERRORCHECKS.BADHISTORY

This test can be found at “. /raven/tests/framework/ErrorChecks/loadBadPointSet.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ErrorChecks.badHistory
```

or

```
./run_framework_tests --re=framework/ErrorChecks.badHistory
```

- Test Description:
 - This test is aimed to check the functionality of RAVEN to error out in case some input inconsistencies are found. In this case, the data contained in “badHistory.csv” is faulty and the code (PointSet) needs to error out.
- Original Author:
 - maljovec
- Creation date:
 - 2017-07-21
- The classes tested in this test are:
 - Steps.IOSStep, DataObjects.PointSet
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : alfoa
- date : 2018-05-15
- description: Adding this test description.

2.3.144 FRAMEWORK ERRORCHECKS.BADINSIMULATION

This test can be found at “./raven/tests/framework/ErrorChecks/badInSimulation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ErrorChecks.badInSimulation
```

or

```
./run_framework_tests --re=framework/ErrorChecks.badInSimulation
```

- Test Description:
 - This test is aimed to check the functionality of RAVEN to error out in case some input inconsistencies are found. In this case, the input is malformed.
- Original Author:
 - maljovec
- Creation date:
 - 2017-07-21
- The classes tested in this test are:
 - Simulation
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.145 FRAMEWORK ERRORCHECKS.UNSYNCEDTYPICALHISTORY

This test can be found at “./raven/tests/framework/ErrorsChecks/unsyncedTypicalHistory.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ErrorsChecks.unsyncedTypicalHistory
```

or

```
./run_framework_tests --re=framework/ErrorsChecks.unsyncedTypicalHistory
```

- Test Description:
 - This test is aimed to check the functionality of RAVEN to error out in case some input inconsistencies are found. In this case, the HistorySet passed into the PostProcessor TypicalHistoryFromHistorySet is not synchronized and the code must error out.
- Original Author:
 - maljovec
- Creation date:
 - 2017-07-21
- The classes tested in this test are:
 - Models.PostProcessors.InterfacePostProcessor.TypicalHistoryFromHistorySet
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.
 2. revision info:
 - author : wangc
 - date : 2020-05-07
 - description: Convert InterfacedPostProcessor: subType will be replaced with the text from method node, and method node will be removed

2.3.146 FRAMEWORK DATABASES HDF5.TEST PUSH INTO HDF5

This test can be found at “./raven/tests/framework/Databases/HDF5/test_push_into_hdf5.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Databases/HDF5.test_push_into_hdf5
```

or

```
./run_framework_tests --re=framework/Databases/HDF5.test_push_into_hdf5
```

- Test Description:
 - The idea of this input case is to test the capability of RAVEN create a Database HDF5 from DataObjects.PointSet and DataObjects.HistorySet and to construct from a Database the DataObjects.
- Original Author:
 - alfoa
- Creation date:
 - 2013-11-11
- The classes tested in this test are:
 - DataObjects.PointSet, DataObjects.HistorySet, Databases.HDF5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2015-05-19
 - description: Closes #171
 2. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
 3. revision info:
 - author : alfoa
 - date : 2015-06-21

- description: modified Names + added new capabilities and flexibility in DataObjects + added options block. Modified XSD schema and manual to reflect the modifications
4. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
5. revision info:
- author : talbpaul
 - date : 2016-04-26
 - description: added check for pre-existing backup files when validating
6. revision info:
- author : maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History.
7. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
8. revision info:
- author : alfoa
 - date : 2019-03-01
 - description: Modified test location

2.3.147 FRAMEWORK DATABASES HDF5.TEST MERGE 2 DATABASES

This test can be found at “./raven/tests/framework/Databases/HDF5/test_merge_2_databases.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Databases/HDF5.test_merge_2_databases
```

or

```
./run_framework_tests --re=framework/Databases/HDF5.test_merge_2_databases
```

- Test Description:

- This test is aimed to check the possibility in RAVEN to merge 2 different Databases of type HDF5.
- Original Author:
 - alfoa
- Creation date:
 - 2015-03-03
- The classes tested in this test are:
 - Databases.HDF5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 2. revision info:
 - author : talbpaul
 - date : 2016-04-26
 - description: some tests slipped through
 3. revision info:
 - author : alfoa
 - date : 2016-04-27
 - description: New subdirectories structure
 4. revision info:
 - author : maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History.
 5. revision info:
 - author : maljdan
 - date : 2016-05-23
 - description: Changing and regolding a test case that uses an external model when unnecessary.
 6. revision info:
 - author : alfoa

- date : 2017-01-21
- description: Adding this test description.

7. revision info:

- author : alfoa
- date : 2019-03-01
- description: Modified test location

2.3.148 FRAMEWORK DATABASES HDF5.NEWERDATABASEWITHFILENAME

This test can be found at “./raven/tests/framework/Databases/HDF5/test_new_database_with_filename.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Databases/HDF5.newerDatabaseWithFilename
```

or

```
./run_framework_tests --re=framework/Databases/HDF5.newerDatabaseWithFilename
```

- Test Description:
 - This test is aimed to check the possibility in RAVEN to create a newer Database (HDF5) with a specific name
- Original Author:
 - alfoa
- Creation date:
 - 2016-12-12
- The classes tested in this test are:
 - Databases.HDF5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-05-19
 - description: Added test

2. revision info:

- author : alfoa
- date : 2019-03-01
- description: Modified test location

2.3.149 FRAMEWORK DATABASES HDF5.HDF5SELECTIVE

This test can be found at “./raven/tests/framework/Databases/HDF5/hdf5_selective.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Databases/HDF5.HDF5selective
```

or

```
./run_framework_tests --re=framework/Databases/HDF5.HDF5selective
```

- Test Description:

- Tests the ability for HDF5 databases to selectively store data by defining variable blocks. Without the selectivity, the resulting HDF5 is 220 KB (all.hdf5). With selectivity, the resulting HDF5 is 187 KB (sine.hdf5).

- Original Author:

- talbpaul

- Creation date:

- 2017-07-06

- The classes tested in this test are:

- Databases.HDF5

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : alfoa
- date : 2019-03-01
- description: Modified test location

2.3.150 FRAMEWORK DATABASES HDF5.HDF5LOCATION

This test can be found at “./raven/tests/framework/Databases/HDF5/hdf5_location.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Databases/HDF5.HDF5location
```

or

```
./run_framework_tests --re=framework/Databases/HDF5.HDF5location
```

- Test Description:
 - Tests that the location specified for the HDF5 is relative to the working dir, not to the run dir.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-07-10
- The classes tested in this test are:
 - Databases.HDF5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2019-03-01
 - description: Modified test location

2.3.151 FRAMEWORK DATABASES HDF5.LARGE HDF5

This test can be found at “./raven/tests/framework/Databases/HDF5/test_large_database.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Databases/HDF5.large_HDF5
```

or

```
./run_framework_tests --re=framework/Databases/HDF5.large_HDF5
```

- Test Description:
 - This test is aimed to test the capability of the RAVEN database structure to handle large databases (#926) in terms of group names.
- Original Author:
 - @alfoa
- Creation date:
 - 2019-03-01
- The classes tested in this test are:
 - Databases.HDF5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2019-03-01
 - description: Added test for testing new way to handle group names

2.3.152 FRAMEWORK DATABASES NETCDF.WRITE

This test can be found at “./raven/tests/framework/Databases/NetCDF/write.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Databases/NetCDF.Write
```

or

```
./run_framework_tests --re=framework/Databases/NetCDF.Write
```

- Test Description:
 - Tests using NetCDF as a writable database format.
- Original Author:

- talbpaul
- Creation date:
 - 2021-03-02
- The classes tested in this test are:
 - Databases.NetCDF

2.3.153 FRAMEWORK DATABASES NETCDF.READ

This test can be found at “./raven/tests/framework/Databases/NetCDF/read.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Databases/NetCDF.Read
```

or

```
./run_framework_tests --re=framework/Databases/NetCDF.Read
```

- Test Description:
 - Tests using NetCDF as a readable database format.
- Original Author:
 - talbpaul
- Creation date:
 - 2021-03-03
- The classes tested in this test are:
 - Databases.NetCDF

2.3.154 FRAMEWORK DATABASES NETCDF.SAMPLE

This test can be found at “./raven/tests/framework/Databases/NetCDF/sample.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Databases/NetCDF.Sample
```

or

```
./run_framework_tests --re=framework/Databases/NetCDF.Sample
```

- Test Description:
 - Tests using NetCDF as a writable database format while sampling.
- Original Author:
 - talbpaul
- Creation date:
 - 2021-03-03
- The classes tested in this test are:
 - Databases.NetCDF

2.3.155 FRAMEWORK DATABASES NETCDF.TWICEWRITE

This test can be found at “./raven/tests/framework/Databases/NetCDF/twice_write.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Databases/NetCDF.TwiceWrite
```

or

```
./run_framework_tests --re=framework/Databases/NetCDF.TwiceWrite
```

- Test Description:
 - Test using NetCDF as a writable database format, and then adding to it. Given two methods of writing to the database, “sampling” (one realization at a time) and “io” (via IOStep), check that all possible combinations come out the same: sample-sample, sample-io, io-sample, and io-io.
- Original Author:
 - talbpaul
- Creation date:

– 2021-03-09

- The classes tested in this test are:
 - Databases.NetCDF

2.3.156 FRAMEWORK.UTILS

This test can be found at “./raven/tests/framework/unit_tests/utils/testUtils.py”. This test can be called executing the following command:

```
./run_tests --re=framework.utils
```

or

```
./run_framework_tests --re=framework.utils
```

- Test Description:
 - This test performs Unit Tests for the utils class. It cannot be considered part of the active code but of the regression test system
- Original Author:
 - talbpaul
- Creation date:
 - 2017-11-01
- The classes tested in this test are:
 - utils.utils
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.
 2. revision info:
 - author : alfoa
 - date : 2019-03-04
 - description: Moved methods isAString, isAFloat, isAInteger, isABoolean from mathUtils to utils

2.3.157 FRAMEWORK.MATHUTILS

This test can be found at “./raven/tests/framework/unit_tests/Utils/testMathUtils.py”. This test can be called executing the following command:

```
./run_tests --re=framework.mathUtils
```

or

```
./run_framework_tests --re=framework.mathUtils
```

- Test Description:
 - This test performs Unit Tests for the mathUtils methods It cannot be considered part of the active code but of the regression test system
- Original Author:
 - talbpaul
- Creation date:
 - 2016-11-01
- The classes tested in this test are:
 - utils.mathUtils
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-11-08
 - description: Relocated utils tests
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 3. revision info:
 - author : alfoa
 - date : 2019-03-04
 - description: Moved methods isAString, isAFloat, isAInteger, isABoolean from mathUtils to utils

2.3.158 FRAMEWORK.RANDOMUTILS

This test can be found at “./raven/tests/framework/unit_tests/utils/testRandomUtils.py”. This test can be called executing the following command:

```
./run_tests --re=framework.randomUtils
```

or

```
./run_framework_tests --re=framework.randomUtils
```

- Test Description:
 - This test performs Unit Tests for the randomUtils methods
- Original Author:
 - talbpaul
- Creation date:
 - 2017-06-16
- The classes tested in this test are:
 - utils.randomUtils

2.3.159 FRAMEWORK.XMLUTILS

This test can be found at “./raven/tests/framework/unit_tests/utils/testXmlUtils.py”. This test can be called executing the following command:

```
./run_tests --re=framework.xmlUtils
```

or

```
./run_framework_tests --re=framework.xmlUtils
```

- Test Description:
 - This test performs Unit Tests for the xmlUtils class It cannot be considered part of the active code but of the regression test system

- Original Author:
 - talbpaul
- Creation date:
 - 2016-11-01
- The classes tested in this test are:
 - utils.xmlUtils
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-11-08
 - description: Relocated utils tests
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.160 FRAMEWORK.CACHEDNDARRAY

This test can be found at “./raven/tests/framework/unit_tests/Utils/testCachedNDArray.py”. This test can be called executing the following command:

```
./run_tests --re=framework.cachedNDArray
```

or

```
./run_framework_tests --re=framework.cachedNDArray
```

- Test Description:
 - This test performs Unit Tests for the cached_ndarray module It cannot be considered part of the active code but of the regression test system
- Original Author:
 - talbpaul

- Creation date:
 - 2016-11-01
- The classes tested in this test are:
 - `utils.cachedNDArray`
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-11-08
 - description: Relocated utils tests
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.161 **FRAMEWORK.TREESTRUCTURE**

This test can be found at “`./raven/tests/framework/unit_tests/utils/testTreeStructure.py`”. This test can be called executing the following command:

```
./run_tests --re=framework.treeStructure
```

or

```
./run_framework_tests --re=framework.treeStructure
```

- Test Description:
 - This test performs Unit Tests for the TreeStructure classes It cannot be considered part of the active code but of the regression test system
- Original Author:
 - talbpaul
- Creation date:
 - 2016-11-01

- The classes tested in this test are:
 - utils.TreeStructure
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-11-08
 - description: Relocated utils tests
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.162 FRAMEWORK.INPUTPARSING

This test can be found at “./raven/tests/framework/unit_tests/utils/testParse.py”. This test can be called executing the following command:

```
./run_tests --re=framework.inputParsing
```

or

```
./run_framework_tests --re=framework.inputParsing
```

- Test Description:
 - This test performs Unit Tests for the utils class (TreeStructure) It cannot be considered part of the active code but of the regression test system
- Original Author:
 - talbpaul
- Creation date:
 - 2017-11-01
- The classes tested in this test are:
 - utils.utils.TreeStructure

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : alfoa
- date : 2018-05-15
- description: Adding this test description.

2.3.163 FRAMEWORK.INPUTDATA

This test can be found at “./raven/tests/framework/unit_tests/utils/testInputData.py”. This test can be called executing the following command:

```
./run_tests --re=framework.inputData
```

or

```
./run_framework_tests --re=framework.inputData
```

- Test Description:
 - This test performs Unit Tests for the InputData methods
- Original Author:
 - talbpaul
- Creation date:
 - 2020-01-08
- The classes tested in this test are:
 - utils.InputData

2.3.164 FRAMEWORK.DEBUGGING

This test can be found at “./raven/tests/framework/unit_tests/utils/testDebugging.py”. This test can be called executing the following command:

```
./run_tests --re=framework.Debugging
```

or

```
./run_framework_tests --re=framework.Debugging
```

- Test Description:
 - This test performs Unit Tests for the Debugging methods It cannot be considered part of the active code but of the regression test system
- Original Author:
 - talbpaul
- Creation date:
 - 2020-01-18
- The classes tested in this test are:
 - utils.Debugging

2.3.165 FRAMEWORK.TEST DATASETS

This test can be found at “./raven/tests/framework/unit_tests/SupervisedLearning/testARMA.py”. This test can be called executing the following command:

```
./run_tests --re=framework.test_datasets
```

or

```
./run_framework_tests --re=framework.test_datasets
```

- Test Description:
 - This test is a Unit Test for the DataSet classes.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-10-20
- The classes tested in this test are:
 - DataSet

2.3.166 FRAMEWORK.UNIT TESTS.TSA.FOURIER

This test can be found at “./raven/tests/framework/unit_tests/TSA/testFourier.py”. This test can be called executing the following command:

```
./run_tests --re=framework.unit_tests.TSA.Fourier
```

or

```
./run_framework_tests --re=framework.unit_tests.TSA.Fourier
```

- Test Description:
 - This test is a Unit Test for the Fourier TimeSeriesAnalyzer classes.
- Original Author:
 - talbpaul
- Creation date:
 - 2021-01-05
- The classes tested in this test are:
 - TSA.Fourier

2.3.167 FRAMEWORK.UNIT TESTS.TSA.POLYNOMIALREGRESSION

This test can be found at “./raven/tests/framework/unit_tests/TSA/testPolynomialRegression.py”. This test can be called executing the following command:

```
./run_tests --re=framework.unit_tests.TSA.PolynomialRegression
```

or

```
./run_framework_tests --re=framework.unit_tests.TSA.PolynomialRegression
```

- Test Description:
 - This test is a Unit Test for the PolynomialRegression TimeSeriesAnalyzer classes.
- Original Author:

- dylanjm
- Creation date:
 - 2021-02-16
- The classes tested in this test are:
 - TSA.PolynomialRegression

2.3.168 FRAMEWORK.UNIT TESTS.TSA.WAVELET

This test can be found at “./raven/tests/framework/unit_tests/TSA/testWavelet.py”. This test can be called executing the following command:

```
./run_tests --re=framework.unit_tests.TSA.Wavelet
```

or

```
./run_framework_tests --re=framework.unit_tests.TSA.Wavelet
```

- Test Description:
 - This test is a Unit Test for the Wavelet TimeSeriesAnalyzer classes.
- Original Author:
 - dylanjm
- Creation date:
 - 2021-02-24
- The classes tested in this test are:
 - TSA.Wavelet

2.3.169 FRAMEWORK.TEST DATASETS

This test can be found at “./raven/tests/framework/unit_tests/DataObjects/TestDataSet.py”. This test can be called executing the following command:

```
./run_tests --re=framework.test_datasets
```

or

```
./run_framework_tests --re=framework.test_datasets
```

- Test Description:
 - This test is a Unit Test for the DataSet classes.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-10-20
- The classes tested in this test are:
 - DataSet

2.3.170 FRAMEWORK.TEST DATASETS

This test can be found at “./raven/tests/framework/unit_tests/DataObjects/TestHistorySet.py”. This test can be called executing the following command:

```
./run_tests --re=framework.test_datasets
```

or

```
./run_framework_tests --re=framework.test_datasets
```

- Test Description:
 - This test is a Unit Test for the HistorySet classes.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-10-20
- The classes tested in this test are:
 - HistorySet

2.3.171 FRAMEWORK.TEST DATASETS

This test can be found at “./raven/tests/framework/unit_tests/DataObjects/TestPointSet.py”. This test can be called executing the following command:

```
./run_tests --re=framework.test_datasets
```

or

```
./run_framework_tests --re=framework.test_datasets
```

- Test Description:
 - This test is a Unit Test for the DataSet classes.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-10-20
- The classes tested in this test are:
 - DataSet

2.3.172 FRAMEWORK.TEST DATASETS

This test can be found at “./raven/tests/framework/unit_tests/DataObjects/TestHierarchal.py”. This test can be called executing the following command:

```
./run_tests --re=framework.test_datasets
```

or

```
./run_framework_tests --re=framework.test_datasets
```

- Test Description:
 - This test is a Unit Test for the DataSet classes.
- Original Author:

- talbpaul
- Creation date:
 - 2017-10-20
- The classes tested in this test are:
 - DataSet

2.3.173 FRAMEWORK ENSEMBLEMODELTESTS.TESTENSEMBLEMODELLINEARPARALLEL

This test can be found at “./raven/tests/framework/ensembleModelTests/test_ensemble_model_linear_internal_parallel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEnsembleModelLinearParallel
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEnsembleModelLinearParallel
```

- Test Description:
 - Example of usage of the Ensemble Model capability in RAVEN, connecting multiple External Models. This test is aimed to check the functionality of assembling multiple Models, when they result in a single chain of Models (linear system). This test checks the functionality of the model using a multi processor (ParallelPython) parallelization scheme.
- Original Author:
 - alfoa
- Creation date:
 - 2016-04-14
- The classes tested in this test are:
 - Models.EnsembleModel, Models.ExternalModel, JobHandler.ParallelPython
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : alfoa
 - date : 2016-04-21
 - description: Modified number of processors
2. revision info:
- author : maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History.
3. revision info:
- author : alfoa
 - date : 2016-09-01
 - description: Close #650
4. revision info:
- author : alfoa
 - date : 2016-11-14
 - description: New syntax ensemble
5. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.174 FRAMEWORK ENSEMBLEMODELTESTS.TESTENSEMBLEMODELLINEARTHREAD

This test can be found at “./raven/tests/framework/ensembleModelTests/test_ensemble_model_linear_threading.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEnsembleModelLinearThrea
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEnsembleModelL
```

- Test Description:
 - Example of usage of the Ensemble Model capability in RAVEN, connecting multiple External Models. This test is aimed to check the functionality of assembling multiple Models, when they result in a single chain of Models (linear system). This test checks the functionality of the model using a multi threading parallelization scheme.

- Original Author:
 - alfoa
- Creation date:
 - 2016-04-14
- The classes tested in this test are:
 - Models.EnsembleModel, Models.ExternalModel, JobHandler.Thread
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History.
 2. revision info:
 - author : alfoa
 - date : 2016-09-01
 - description: Close #650
 3. revision info:
 - author : alfoa
 - date : 2016-11-14
 - description: New syntax ensemble
 4. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.175 FRAMEWORK ENSEMBLEMODELTESTS.TESTENSEMBLEMODELLINEARTHREADWI

This test can be found at “./raven/tests/framework/ensembleModelTests/test_ensemble_model_linear_threading_with_time_series.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEnsembleModelLinearThrea
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEnsembleModelL
```

- Test Description:
 - Example of usage of the Ensemble Model capability in RAVEN, connecting multiple External Models. This test is aimed to check the functionality of assembling multiple Models, when they result in a single chain of Models (linear system) and they need to transfer “time series” type of data (vectors) using the DataSet DataObject. This test checks the functionality of the model using a multi threading parallelization scheme.
- Original Author:
 - alfoa
- Creation date:
 - 2016-08-02
- The classes tested in this test are:
 - Models.EnsembleModel, Models.ExternalModel, JobHandler.Thread
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-11-29
 - description: Added test for time series
 2. revision info:
 - author : alfoa
 - date : 2016-12-01
 - description: Fixed order of objects in test inputs in order to respect the XSD schema
 3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 4. revision info:
 - author : alfoa
 - date : 2018-02-03
 - description: Modified test for the new DataObject system. Usage of DataSet.

2.3.176 FRAMEWORK ENSEMBLEMODELTESTS.TESTENSEMBLEMODELNONLINEARPARAL

This test can be found at “./raven/tests/framework/ensembleModelTests/test_ensemble_model_picard_parallel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEnsembleModelNonLinearPa
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEnsembleModelN
```

- Test Description:
 - Example of usage of the Ensemble Model capability in RAVEN, connecting multiple External Models. This test is aimed to check the functionality of assembling multiple Models, testing the iterative scheme present in RAVEN when the chain of Models turn to be a Non Linear System. This test checks the functionality of the Model with a multi processor (Parallel Python) parallelization scheme.
- Original Author:
 - alfoa
- Creation date:
 - 2016-04-14
- The classes tested in this test are:
 - Models.EnsembleModel, Models.ExternalModel, JobHandler.ParallelPython
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-04-21
 - description: Modified number of processors
 2. revision info:
 - author : maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History.
 3. revision info:

- author : alfoa
- date : 2016-09-01
- description: Close #650

4. revision info:

- author : alfoa
- date : 2016-11-14
- description: New syntax ensemble

5. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.3.177 FRAMEWORK ENSEMBLEMODELTESTS.TESTENSEMBLEMODELNONLINEARTHREA

This test can be found at “./raven/tests/framework/ensembleModelTests/test_ensemble_model_picard_thread.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEnsembleModelNonLinearTh
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEnsembleModelN
```

- Test Description:
 - Example of usage of the Ensemble Model capability in RAVEN, connecting multiple External Models. This test is aimed to check the functionality of assembling multiple Models, testing the iterative scheme present in RAVEN when the chain of Models turn to be a Non Linear System. This test checks the functionality of the Model with a multi threading parallelization scheme.
- Original Author:
 - alfoa
- Creation date:
 - 2016-04-14
- The classes tested in this test are:

- Models.EnsembleModel, Models.ExternalModel, JobHandler.Thread
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-04-21
 - description: Modified number of processors
 2. revision info:
 - author : maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History.
 3. revision info:
 - author : alfoa
 - date : 2016-09-01
 - description: Close #650
 4. revision info:
 - author : alfoa
 - date : 2016-11-14
 - description: New syntax ensemble
 5. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 6. revision info:
 - author : wangc
 - date : 2017-09-11
 - description: add new sub-node 'initialStartModels'

2.3.178 FRAMEWORK ENSEMBLEMODELTESTS.TESTENSEMBLEMODELWITHCODE

This test can be found at “./raven/tests/framework/ensembleModelTests/test_ensemble_model_linear_threading_with_code.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEnsembleModelWithCode
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEnsembleModelW
```

- Test Description:
 - Example of usage of the Ensemble Model capability in RAVEN, connecting multiple External Models and Codes. This test is aimed to check the functionality of assembling multiple Models, when they result in a single chain of Models (linear system). This test checks the functionality of the model using a multi threading parallelization scheme for the External Models and multi processor scheme for the external Code.
- Original Author:
 - alfoa
- Creation date:
 - 2016-04-14
- The classes tested in this test are:
 - Models.EnsembleModel, Models.ExternalModel, Models.Code, JobHandler.Thread
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-04-21
 - description: Modified number of processors
 2. revision info:
 - author : alfoa
 - date : 2016-11-14
 - description: New syntax ensemble
 3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.179 FRAMEWORK ENSEMBLEMODELTESTS.TESTENSEMBLEMODELLINEARPARALLELV

This test can be found at “./raven/tests/framework/ensembleModelTests/test_ensemble_model_linear_internal_parallel_with_optimizer.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEnsembleModelLinearParallel
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEnsembleModelL
```

- Test Description:
 - Example of usage of the Ensemble Model capability in RAVEN, connecting multiple External Models. This test is aimed to check the functionality of assembling multiple Models, when they result in a single chain of Models (linear system) and they are sampled with an Optimization scheme. This test checks the functionality of the model using a multi processor (ParallelPython) parallelization scheme.
- Original Author:
 - alfoa
- Creation date:
 - 2016-09-01
- The classes tested in this test are:
 - Models.EnsembleModel, Models.ExternalModel, JobHandler.ParallelPython
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-10-20
 - description: Modified XSD and removed dim attribute from all the tests
 2. revision info:
 - author : chenj
 - date : 2016-10-31
 - description: Regold parallel EnsembleModel test since change in the optimization algorithm

3. revision info:

- author : alfoa
- date : 2016-11-14
- description: New syntax ensemble

4. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.3.180 FRAMEWORK ENSEMBLEMODELTESTS.TESTENSEMBLEMODELLATERALINSERTIO

This test can be found at “./raven/tests/framework/ensembleModelTests/test_ensemble_model_linear_with_multiple_lateral_insertions.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEnsembleModelLateralInse
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEnsembleModelL
```

- Test Description:
 - Example of usage of the Ensemble Model capability in RAVEN, connecting multiple External Models. This test is aimed to check the functionality of assembling multiple Models, when multiple chains of Models are connected “laterly”.
- Original Author:
 - alfoa
- Creation date:
 - 2016-12-13
- The classes tested in this test are:
 - Models.EnsembleModel, Models.ExternalModel, JobHandler.ParallelPython
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.3.181 FRAMEWORK ENSEMBLEMODELTESTS.TESTENSEMBLEMODELWITH2CODESANDA

This test can be found at “./raven/tests/framework/ensembleModelTests/test_ensemble_model_with_2_codes.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEnsembleModelWith2CodesA
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEnsembleModelW
```

- Test Description:
 - Example of usage of the Ensemble Model capability in RAVEN, connecting multiple multiple Codes together, with same output variable names. This means that the alias system has been used and this test is aimed to show how to use it in these kinds of situations.
- Original Author:
 - alfoa
- Creation date:
 - 2017-02-16
- The classes tested in this test are:
 - Models.Code, JobHandler.Thread

2.3.182 FRAMEWORK ENSEMBLEMODELTESTS.TESTENSEMBLEMODELWITH2CODESANDA

This test can be found at “./raven/tests/framework/ensembleModelTests/test_ensemble_model_2_codes_optional_output.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEnsembleModelWith2CodesA
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEnsembleModelW
```

- Test Description:
 - The main goal of this test is to show how to specify optional output in the Ensemble Model object. All the RAVEN available data storage types are tested (DataObjects and Databases).
- Original Author:
 - alfoa
- Creation date:
 - 2017-05-17
- The classes tested in this test are:
 - Models.Code, JobHandler.Thread
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-07-10
 - description: Modified test in order to show how to use a HDF5 as optional output (Issue #237)

2.3.183 FRAMEWORK ENSEMBLEMODELTESTS.TESTENSEMBLEMODELLINEAREXPECTED

This test can be found at “./raven/tests/framework/ensembleModelTests/test_ensemble_model_linear_expected_failures.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEnsembleModelLinearExpect
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEnsembleModelL
```

- Test Description:

- Mechanic TEST: This test is aimed to check that the failures from the EnsembleModel are correctly collected without abnormal termination of RAVEN.
- Original Author:
 - alfoa
- Creation date:
 - 2017-09-22
- The classes tested in this test are:
 - Models.EnsembleModel, Models.ExternalModel, JobHandler.Thread

2.3.184 FRAMEWORK ENSEMBLEMODELTESTS.TESTENSEMBLEMODELFULLYCORRVAR

This test can be found at “./raven/tests/framework/ensembleModelTests/test_ensemble_model_fully_correlated_vars.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEnsembleModelFullyCorrVa
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEnsembleModelF
```

- Test Description:
 - This test is a mechanical test for the EnsembleModel to test that it can correctly handle fully correlated variables
- Original Author:
 - alfoa
- Creation date:
 - 2017-12-07
- The classes tested in this test are:
 - Models.EnsembleModel, Models.ExternalModel, Models.Code, JobHandler.Thread
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : alfoa
- date : 2017-12-07
- description: Added the test

2.3.185 FRAMEWORK ENSEMBLEMODELTESTS.INDEXINPUTOUTPUT

This test can be found at “./raven/tests/framework/ensembleModelTests/index_input_output.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.indexInputOutput
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.indexInputOutput
```

- Test Description:
 - Tests that an index can be depended on by variables in both in input and output space of an ensembled model.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-02-06
- The classes tested in this test are:
 - Models.EnsembleModel, Models.ExternalModel, DataObject.DataSet

2.3.186 FRAMEWORK ENSEMBLEMODELTESTS.TESTEMCONNECTION

This test can be found at “./raven/tests/framework/ensembleModelTests/test_em_connection.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEMConnection
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEMConnection
```

- Test Description:
 - Example of usage of the Ensemble Model capability in RAVEN, connecting multiple External Models. This test is aimed to check the connection between multiple models, as reported in issue #696.
- Original Author:
 - alfoa
- Creation date:
 - 2018-08-04
- The classes tested in this test are:
 - Models.EnsembleModel, Models.ExternalModel, JobHandler.ParallelPython

2.3.187 FRAMEWORK ENSEMBLEMODELTESTS.TESTEMREUSABILITY

This test can be found at “./raven/tests/framework/ensembleModelTests/test_em_reuse.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.testEMReusability
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.testEMReusability
```

- Test Description:
 - Example of re-using the ensemble model in different steps. This test is aimed to fix the bug reported in issue #859.
- Original Author:
 - Jimmy
- Creation date:
 - 2019-10-30
- The classes tested in this test are:
 - Models.EnsembleModel, Models.ExternalModel, JobHandler.ParallelPython

2.3.188 FRAMEWORK ENSEMBLEMODELTESTS.NDENSEMBLE2OUTS

This test can be found at “./raven/tests/framework/ensembleModelTests/nd_ensemble_2outs.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ensembleModelTests.NDensemble2Outs
```

or

```
./run_framework_tests --re=framework/ensembleModelTests.NDensemble2Outs
```

- Test Description:
 - Tests having 2 outputs in an ensemble model with an ND model. See #1119.
- Original Author:
 - talbpaul
- Creation date:
 - 2021-02-25
- The classes tested in this test are:
 - Models.EnsembleModel

2.3.189 FRAMEWORK CODEINTERFACETESTS.TESTMCMAMMOTHNOEXECUTABLE BISONRELAP7

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_perturb_mammoth_bison_relap7.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.testMCMammothNoExecutable_Bi
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.testMCMammothNoExe
```

- Test Description:

- An example of using the MAMMOTH code interface (no executable). It checks Bison and RELAP7. This test is designed to ensure the MAMMOTH interface mechanics is correctly functional. In addition it used the RAVEN alias system.
- Original Author:
 - tompjame
- Creation date:
 - 2016-08-29
- The classes tested in this test are:
 - Models.Code.MAMMOTH, Models.AliasSystem
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 2. revision info:
 - author : alfoa
 - date : 2016-11-30
 - description: Added alias for MAMMOTH just to test the new system
 3. revision info:
 - author : alfoa
 - date : 2016-12-12
 - description: Added type for alias system in mammoth test
 4. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.190 FRAMEWORK CODEINTERFACETESTS.TESTMCMAMMOTHNOEXECUTABLEBISONR

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_mammoth_r7_bison_no_exe_hdf5_restart.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.testMCMammothNoExecutableBison
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.testMCMammothNoExecutableBison
```

- Test Description:
 - An example of using the MAMMOTH code interface (no executable). This test is designed to ensure the MAMMOTH interface mechanics is correctly functional. In addition, the alias system is used
- Original Author:
 - alfoa
- Creation date:
 - 2016-12-15
- The classes tested in this test are:
 - Models.Code.MAMMOTH, Model.AliasSystem
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-12-15
 - description: modified test in order to be validable by XSD schema
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.191 FRAMEWORK CODEINTERFACETESTS.TESTMCMAMMOTHNOEXECUTABLE RATTLESNAKEBISON

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_perturb_all_rattlesnake_bison.xml”. This test can be called executing the following command:


```
./run_tests --re=framework/CodeInterfaceTests.testMCMAMMOTHNoExecutable_Ra
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.testMCMAMMOTHNoExe
```

- Test Description:
 - An example of using the MAMMOTH code interface (no executable). It checks Bison and RattleSnake. This test is designed to ensure the MAMMOTH interface mechanics is correctly functional, overall for Neutron Cross section perturbation.
- Original Author:
 - tompjame
- Creation date:
 - 2016-08-29
- The classes tested in this test are:
 - Models.Code.MAMMOTH
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.192 FRAMEWORK CODEINTERFACETESTS.TESTPERTURBMAMMOTHNOEXECUTABLE RATTLESNAKEBISON

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_perturb_mammoth_rattlesnake_bison.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.testPerturbMAMMOTHNoExecutab
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.testPerturbMAMMOTH
```

- Test Description:
 - An example of using the MAMMOTH code interface. This test is designed to ensure the MAMMOTH interface runs correctly. It runs BISON and RattleSnake.
- Original Author:
 - tompjame
- Creation date:
 - 2016-08-29
- The classes tested in this test are:
 - Models.Code.MAMMOTH
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.193 FRAMEWORK CODEINTERFACETESTS.TESTMC

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_mc_rattlesnake.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.testMC
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.testMC
```

- Test Description:
 - An example of using the Rattlesnake code interface. This test is aimed to test the mechanics of the interface (no executable)..
- Original Author:
 - wangc
- Creation date:
 - 2016-05-09
- The classes tested in this test are:
 - Models.Code.Rattlesnake
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.194 FRAMEWORK CODEINTERFACETESTS OPENMODELICAINTERFACETEST-NOEXECUTABLE

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_OpenModelica_code_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/OpenModelicaInterfaceTestNoE
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/OpenModelicaInterfaceTests
```

- Test Description:
 - The purpose of this test is to exercise the OpenModelica external code interface without needing to have a built executable. It is directly modeled on the test_relap5_code_interface.xml test and works by making sure that 1) The input files are perturbed correctly 2) That the raw output CSV files are properly processed for reading by RAVEN
- Original Author:
 - @bobk
- Creation date:
 - 2015-06-11
- The classes tested in this test are:
 - CodeInterfaces.OpenModelica
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : @talbpaul
 - date : 2016-04-26
 - description: Added check for pre-existing HDF5 backup files when validating

2.3.195 FRAMEWORK CODEINTERFACETESTS DYMOLAINTERFACETESTNOEXECUTABLE

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_Dymola_code_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/DymolaInterfaceTestNoExecutable
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/DymolaInterfaceTest
```

- Test Description:

- The purpose of this test is to exercise the Dymola external code interface without needing to have a built executable. It is directly modeled on the `test_relap5_code_interface.xml` test and works by making sure that 1) The input files are perturbed correctly 2) The raw output MAT files are properly processed for reading by RAVEN
- Original Author:
 - @kimj
- Creation date:
 - 2015-11-11
- The classes tested in this test are:
 - `CodeInterfaces.Dymola`
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : @talbpaul
 - date : 2016-04-26
 - description: Added check for pre-existing HDF5 backup files when validating

2.3.196 FRAMEWORK CODEINTERFACETESTS.DYMOLATESTLOADSOMEVARSNOEXECUTABLE

This test can be found at “`./raven/tests/framework/CodeInterfaceTests/test_Dymola_code_interface_load_some_vars.xml`”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.DymolaTestLoadSomeVarsNoExec
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.DymolaTestLoadSomeV
```

- Test Description:
 - The purpose of this test is to exercise the Dymola external code interface without needing to have a built executable. This special case shows how to load just few output variables from the Dymola outputs (e.g. `.mat` files). In this case only the variables `e,g` and `h` will be loaded
- Original Author:

- @alfoa
- Creation date:
 - 2017-09-16
- The classes tested in this test are:
 - CodeInterfaces.Dymola

2.3.197 FRAMEWORK CODEINTERFACETESTS.DYMOLATESTTIMEDEPNOEXECUTABLEENS

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_Dymola_code_interface_timedep.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.DymolaTestTimeDepNoExecutable
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.DymolaTestTimeDepNo
```

- Test Description:
 - The purpose of this test is to ensure that the Dyola external code interface functions properly with the new ensemble model functionality. Since the output files have been pre-generated, a Dymola executable is not necessary to run this test.
- Original Author:
 - alfoa
- Creation date:
 - 2016-11-11
- The classes tested in this test are:
 - Models.EnsembleModel,CodeInterfaces.OpenModelica
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-12-01

- description: Fixed order of test inputs to respect XSD schema
2. revision info:
- author : alfoa
 - date : 2018-02-04
 - description: Modified test in order to work with the new DataObject structure (Usage of DataSet)

2.3.198 FRAMEWORK CODEINTERFACETESTS.MELCORINTERFACEFORWARDSAMPLINGNO

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_melcor_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.melcorInterfaceForwardSampli
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.melcorInterfaceFor
```

- Test Description:
 - An example of using the Melcor 2.1/2.2 code interface. This test is aimed to test the mechanics of the interface (no executable).
- Original Author:
 - alfoa
- Creation date:
 - 2017-04-27
- The classes tested in this test are:
 - Models.Code.Melcor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-04-27
 - description: Adding this test description.
 2. revision info:

- author : alfoa
- date : 2020-10-31
- description: Added csv xml node in the Code block for showing how to use it.

2.3.199 FRAMEWORK CODEINTERFACETESTS PRESCIENTINTERFACE

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_Prescient_code_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/PrescientInterface
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/PrescientInterface
```

- Test Description:
 - Test the Prescient Code Interface. This perturbs the demand on the Abel bus. This should result in different outputs depending on the value.
- Original Author:
 - @coglj
- Creation date:
 - 2020-09-02
- The classes tested in this test are:
 - CodeInterfaces.PrescientCodeInterface

2.3.200 FRAMEWORK CODEINTERFACETESTS PRESCIENTINTERFACE

This test can be found at “./raven/tests/framework/CodeInterfaceTests/test_Prescient_code_interface_fake.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/PrescientInterface
```

or


```
./run_framework_tests --re=framework/CodeInterfaceTests/PrescientInterface
```

- Test Description:
 - Test the Prescient Code Interface. This perturbs the demand on the Abel bus. This should result in different outputs depending on the value. This version is an interface check version.
- Original Author:
 - @coglj
- Creation date:
 - 2020-09-02
- The classes tested in this test are:
 - CodeInterfaces.PrescientCodeInterface

2.3.201 SAPHIRE

This test can be found at “./raven/tests/framework/CodeInterfaceTests/SaphireInterface/test_saphire.xml”. This test can be called executing the following command:

```
./run_tests --re=saphire
```

or

```
./run_framework_tests --re=saphire
```

- Test Description:
 - This test is aimed to show the extension of the GenericCode interface for SAPHIRE
- Original Author:
 - wangc
- Creation date:
 - 2018-07-03
- The classes tested in this test are:
 - CodeInterface

2.3.202 FRAMEWORK CODEINTERFACETESTS SCALE.SCALEORIGEN

This test can be found at “./raven/tests/framework/CodeInterfaceTests/Scale/test_scale_origen_forward.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/Scale.ScaleOrigen
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/Scale.ScaleOrigen
```

- Test Description:
 - An example of using the the Model Code of type Scale, with Forward Sampling and driving the ORIGEN sequence
- Original Author:
 - alfoa
- Creation date:
 - 2018-04-04
- The classes tested in this test are:
 - Models.Code.Scale
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-04-04
 - description: Test created

2.3.203 FRAMEWORK CODEINTERFACETESTS SCALE.SCALEORIGEN

This test can be found at “./raven/tests/framework/CodeInterfaceTests/Scale/test_scale_triton_forward.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/Scale.ScaleOrigen
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/Scale.ScaleOrigen
```

- Test Description:
 - An example of using the the Model Code of type Scale, with Forward Sampling and driving the TRITON (t- dpl) sequence
- Original Author:
 - alfoa
- Creation date:
 - 2018-04-04
- The classes tested in this test are:
 - Models.Code.Scale
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-04-04
 - description: Test created

2.3.204 FRAMEWORK CODEINTERFACETESTS SCALE.SCALETRITONORIGENCOMBINED

This test can be found at “./raven/tests/framework/CodeInterfaceTests/Scale/test_scale_combined_forward.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/Scale.ScaleTritonOrigenCombini
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/Scale.ScaleTritonO
```

- Test Description:

- An example of using the the Model Code of type Scale, with Forward Sampling and combined calculation (Triton to Origen)
- Original Author:
 - alfoa
- Creation date:
 - 2018-04-04
- The classes tested in this test are:
 - Models.Code.Scale
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-04-04
 - description: Test created
 2. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.205 FRAMEWORK CODEINTERFACETESTS MOOSEBASEAPPS.INPUTPARSER

This test can be found at “./raven/tests/framework/CodeInterfaceTests/MOOSEBaseApps/input_parser.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/MOOSEBaseApps.InputParser
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/MOOSEBaseApps.Input
```

- Test Description:
 - Various challenging moose-based input parsing tests. As far as I know would not actually run in MOOSE.
- Original Author:

- talbpaul
- Creation date:
 - 2020-04-06
- The classes tested in this test are:
 - Models.Code.MooseBasedApp

2.3.206 FRAMEWORK CODEINTERFACETESTS MOOSEBASEAPPS.MOOSEEX18WITHGENERIC

This test can be found at “./raven/tests/framework/CodeInterfaceTests/MOOSEBaseApps/test_MC_MooseEx18_with_generic_file.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/MOOSEBaseApps.MooseEx18withG
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/MOOSEBaseApps.Moos
```

- Test Description:
 - An example of using the MooseBasedApp code interface, perturbing the MOOSE main input file and a generic external input file (e.g. CSV file)
- Original Author:
 - alfoa
- Creation date:
 - 2020-01-31
- The classes tested in this test are:
 - Models.Code.MooseBasedApp
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2020-01-31
 - description: Created test

2.3.207 FRAMEWORK CODEINTERFACETESTS MOOSEBASEAPPS.MOOSEEX18ONLYGENERIC

This test can be found at “./raven/tests/framework/CodeInterfaceTests/MooseBaseApps/test_MC_MooseEx18_only_generic_file.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/MooseBaseApps.MooseEx18onlyG
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/MooseBaseApps.Moose
```

- Test Description:
 - An example of using the MooseBasedApp code interface, perturbing a generic external input file ONLY (e.g. CSV file)
- Original Author:
 - alfoa
- Creation date:
 - 2020-01-31
- The classes tested in this test are:
 - Models.Code.MooseBasedApp
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2020-01-31
 - description: Created test

2.3.208 FRAMEWORK CODEINTERFACETESTS INSTANT.TESTINSTANT NOEXEC

This test can be found at “./raven/tests/framework/CodeInterfaceTests/Instant/test_instant_noexec.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/Instant.testInstant_noexec
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/Instant.testInstant
```

- Test Description:
 - An example of using the code interface RattleSnake when the INSTANT solver is employed (noexecutable). This test is aimed to check the mechanics of the code interface when a XS library needs to be perturbed (IAEA2D benchmark).
- Original Author:
 - wangc
- Creation date:
 - 2016-07-14
- The classes tested in this test are:
 - Models.Code.Rattlesnake
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.209 FRAMEWORK CODEINTERFACETESTS INTERFACESWORKSHOPEXAMPLE PROJECTILEEXAMPLE.PROJWITHOUTCSV

This test can be found at “./raven/tests/framework/CodeInterfaceTests/InterfacesWorkshopProjectileExample/example_using_interface_without_CSV.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/InterfacesWorkshopExample/Pr
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/InterfacesWorkshop
```

- Test Description:
 - Testing the functionality of the Projectile Example interface without the creation of the CSV out of the code output. The output is directly returned as dictionary to RAVEN (no double IO).
- Original Author:
 - alfoa
- Creation date:
 - 2020-10-31
- The classes tested in this test are:
 - Models.Code

2.3.210 FRAMEWORK CODEINTERFACETESTS INTERFACESWORKSHOPEXAMPLE PROJECTILEEXAMPLE.PROJWITHCSV

This test can be found at “./raven/tests/framework/CodeInterfaceTests/InterfacesWorkshop/ProjectileExample/example_using_interface_with_csv_creation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/InterfacesWorkshop/ProjectileExample/Pr
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/InterfacesWorkshop
```

- Test Description:
 - Testing the functionality of the Projectile Example interface with the creation of the CSV out of the code output. The CSV is then parsed by RAVEN.
- Original Author:
 - alfoa
- Creation date:

– 2020-10-31

- The classes tested in this test are:
 - Models.Code

2.3.211 FRAMEWORK CODEINTERFACETESTS INTERFACESWORKSHOPEXAMPLE BATEMANEXAMPLE.BATEMAN

This test can be found at “./raven/tests/framework/CodeInterfaceTests/InterfacesWorkshopExample/BatemanExample/example_using_interface_bateman.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/InterfacesWorkshopExample/BatemanExample/BatemanExample/example_using_interface_bateman.xml
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/InterfacesWorkshopExample/BatemanExample/BatemanExample/example_using_interface_bateman.xml
```

- Test Description:
 - Testing the functionality of the Bateman Example interface. It demonstrates typical usage of the MultiRun with Monte Carlo sampler.
- Original Author:
 - alfoa
- Creation date:
 - 2020-10-31
- The classes tested in this test are:
 - Models.Code

2.3.212 FRAMEWORK CODEINTERFACETESTS NEUTRINO.BASE

This test can be found at “./raven/tests/framework/CodeInterfaceTests/Neutrino/test_neutrino_base.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/Neutrino.Base
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/Neutrino.Base
```

- Test Description:
 - Basic test of the Neutrino base interface. Sample three values for the particle size from a uniform distribution and uses a Monte Carlo sampler. Outputs the results of each and particle size run. This test is used to test the Neutrino interface with no executable.
- Original Author:
 - EmeraldRyan
- Creation date:
 - 2019-07-16
- The classes tested in this test are:
 - Models.Code.Neutrino

2.3.213 FRAMEWORK CODEINTERFACETESTS.MAAP5INTERFACEFORWARDSAMPLING

This test can be found at “./raven/tests/framework/CodeInterfaceTests/MAAP5/test_maap5_code_interface_forward.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.MAAP5interfaceForwardSampling
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.MAAP5interfaceForward
```

- Test Description:
 - An example of using the the Model Code of type MAAP5, with Forward Sampling (e.g. MonteCarlo)
- Original Author:
 - alfoa
- Creation date:

- 2016-06-27
- The classes tested in this test are:
 - Models.Code.MAAP5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-07-01
 - description: Addressed Dan’s comments on interface (By Claudia Picoco)
 2. revision info:
 - author : alfoa
 - date : 2016-09-01
 - description: Close #650
 3. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 4. revision info:
 - author : talbpaul
 - date : 2016-10-25
 - description: removed dim in OutStreams Plot for validation purposes
 5. revision info:
 - author : alfoa
 - date : 2016-11-15
 - description: Updated input files
 6. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.214 FRAMEWORK CODEINTERFACETESTS.MAAP5INTERFACEDETSAMPLING

This test can be found at “./raven/tests/framework/CodeInterfaceTests/MAAP5/test_maap5_code_interface_det.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.MAAP5interfaceDETSampling
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.MAAP5interfaceDETS
```

- Test Description:
 - An example of using the the Model Code of type MAAP5. This test is aimed to test the mechanics of the MAAP5 interface when used with the Dynamic Event Tree methodology.
- Original Author:
 - alfoa
- Creation date:
 - 2016-06-27
- The classes tested in this test are:
 - Models.Code.MAAP5, Samplers.DynamicEventTree
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-07-01
 - description: Addressed Dan’s comments on interface (By Claudia Picoco)
 2. revision info:
 - author : bobk
 - date : 2016-07-07
 - description: Changes file mode on two XML test file from 775 to 664 so that they will not be flagged as modified after validate_xml is run.
 3. revision info:
 - author : alfoa
 - date : 2016-09-01
 - description: Close #650
 4. revision info:

- author : talbpaul
- date : 2016-09-15
- description: Test updates

5. revision info:

- author : talbpaul
- date : 2016-10-25
- description: removed dim in OutStream Plot for validation purposes

6. revision info:

- author : alfoa
- date : 2016-11-15
- description: Updated input files

7. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.3.215 FRAMEWORK CODEINTERFACETESTS.MAAP5INTERFACEHYBRIDDETSAMPLING

This test can be found at “./raven/tests/framework/CodeInterfaceTests/MAAP5/test_maap5_code_interface_hybrid_det.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.MAAP5interfaceHybridDETSampl
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.MAAP5interfaceHybr
```

- Test Description:
 - An example of using the the Model Code of type MAAP5. This test is aimed to test the mechanics of the MAAP5 interface when used with the Dynamic Event Tree (Hybrid Dynamic Event Tree) methodology.
- Original Author:
 - alfoa
- Creation date:

- 2016-07-01
- The classes tested in this test are:
 - Models.Code.MAAP5, Samplers.DynamicEventTree
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-07-05
 - description: Fixing XSD and user manual to match XSD and code.
 2. revision info:
 - author : alfoa
 - date : 2016-09-01
 - description: Close #650
 3. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 4. revision info:
 - author : talbpaul
 - date : 2016-10-25
 - description: removed dim in OutStream Plot for validation purposes
 5. revision info:
 - author : alfoa
 - date : 2016-11-15
 - description: Updated input files
 6. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 7. revision info:
 - author : alfoa
 - date : 2020-10-16
 - description: Removed plots since are not checked in this test.

2.3.216 FRAMEWORK CODEINTERFACETESTS.MAAP5INTERFACEADETSAMPLING

This test can be found at “./raven/tests/framework/CodeInterfaceTests/MAAP5/test_maap5_code_interface_adaptive_det.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.MAAP5interfaceADETSampling
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.MAAP5interfaceADET
```

- Test Description:
 - An example of using the the Model Code of type MAAP5. This test is aimed to test the mechanics of the MAAP5 interface when used with the Adaptive Dynamic Event Tree methodology.
- Original Author:
 - alfoa
- Creation date:
 - 2016-07-11
- The classes tested in this test are:
 - Models.Code.MAAP5, Samplers.AdaptiveDynamicEventTree
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-07-21
 - description: Fixed XSD
 2. revision info:
 - author : alfoa
 - date : 2016-07-27
 - description: modified xml input tests for MAAP5
 3. revision info:
 - author : alfoa

- date : 2017-01-21
- description: Adding this test description.

4. revision info:

- author : maljdan
- date : 2017-05-03
- description: Reducing batch size to ensure consistent execution path

5. revision info:

- author : alfoa
- date : 2019-03-07
- description: Modified syntax in Functions as for issue #934

2.3.217 FRAMEWORK CODEINTERFACETESTS.MAAP5INTERFACEAHDETSAMPLING

This test can be found at “./raven/tests/framework/CodeInterfaceTests/MAAP5/test_maap5_code_interface_adaptive_hybrid_det.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.MAAP5interfaceAHDETSampling
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.MAAP5interfaceAHDET
```

- Test Description:
 - An example of using the the Model Code of type MAAP5. This test is aimed to test the mechanics of the MAAP5 interface when used with the Adaptive Dynamic Event Tree methodology (Adaptive Hybrid Dynamic Event Tree).
- Original Author:
 - alfoa
- Creation date:
 - 2016-07-11
- The classes tested in this test are:
 - Models.Code.MAAP5, Samplers.AdaptiveDynamicEventTree
- Since the creation of this test, the following main revisions have been performed:

1. revision info:
 - author : alfoa
 - date : 2016-07-21
 - description: Fixed XSD
2. revision info:
 - author : alfoa
 - date : 2016-07-27
 - description: Modified xml input tests for MAAP5
3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
4. revision info:
 - author : maljdan
 - date : 2017-05-03
 - description: Reducing batch size to ensure consistent execution path
5. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.218 FRAMEWORK CODEINTERFACETESTS.MAAP5INTERFACEDETSAMPLINGMULTIBRA

This test can be found at “./raven/tests/framework/CodeInterfaceTests/MAAP5/test_maap5_code_interface_det_multibranch.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.MAAP5interfaceDETSamplingMult
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.MAAP5interfaceDETS
```

- Test Description:
 - An example of using the the Model Code of type MAAP5. This test is aimed to test the mechanics of the MAAP5 interface when used with the Dynamic Event Tree methodology, characterized my a Multi-Branch sampling approach.

- Original Author:
 - alfoa
- Creation date:
 - 2016-12-16
- The classes tested in this test are:
 - Models.Code.MAAP5, Samplers.DynamicEventTree
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.219 FRAMEWORK CODEINTERFACETESTS RAVEN.CODE

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RAVEN/code.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RAVEN.Code
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RAVEN.Code
```

- Test Description:
 - Basic test of the raven-runs-raven interface. Outer raven runs a grid sampling by changing the upper and lower bounds of the sampledVars distribution on the inner raven. Inner raven runs Grid samples, does basic stats, and returns the mean, sigma to the outer raven. Specifically uses both a File and Function in the inner, to cover testing
- Original Author:
 - talbpaul
- Creation date:
 - 2019-10-16

- The classes tested in this test are:
 - Models.Code.RAVEN
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : ZHOUI2
 - date : 2019-10-17
 - description: This test will run twice to make sure if a working directory is already exist, warning message will be shown up. Assures the results and the subdirectory generated are identical.

2.3.220 FRAMEWORK CODEINTERFACETESTS RATTLESNAKEINTERFACE.TESTGRIDRATTLE

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RattlesnakeInterface/test_grid_rattlesnake.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RattlesnakeInterface.testGrid
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RattlesnakeInterface
```

- Test Description:
 - An example of using the code interface RattleSnake when XS need to be perturbed. This test is aimed to check the functionality (running the code) of the Rattlesnake interface when a Grid sampling approach is used.
- Original Author:
 - wangc
- Creation date:
 - 2016-04-21
- The classes tested in this test are:
 - Models.Code.Rattlesnake, Sampler.Grid
- Since the creation of this test, the following main revisions have been performed:

1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.221 FRAMEWORK CODEINTERFACETESTS RATTLESNAKEINTERFACE.TESTMC

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RattlesnakeInterface/test_mc_rattlesnake.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RattlesnakeInterface.testMC
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RattlesnakeInterface
```

- Test Description:
 - An example of using the code interface RattleSnake when XS need to be perturbed. This test is aimed to check the functionality (running the code) of the Rattlesnake interface when a MonteCarlo sampling approach is used.
- Original Author:
 - wangc
- Creation date:
 - 2016-04-21
- The classes tested in this test are:
 - Models.Code.Rattlesnake, Sampler.MonteCarlo
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc

- date : 2016-08-04
- description: Modify test to perturb transport XS and regold the tests

2. revision info:

- author : talbpaul
- date : 2016-09-15
- description: Test updates

3. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.3.222 FRAMEWORK CODEINTERFACE TESTS RATTLESNAKE INTERFACE.TESTMCRATTLES

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RattlesnakeInterface/test_perturb_rattlesnake_only.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RattlesnakeInterface.testMCR
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RattlesnakeInterface
```

- Test Description:
 - An example of using the code interface RattleSnake. This test is aimed to check the functionality (running the code) of the Rattlesnake interface (perturbing only RattleSnake and not the YAK library) when a MonteCarlo sampling approach is used.
- Original Author:
 - wangc
- Creation date:
 - 2016-04-21
- The classes tested in this test are:
 - Models.Code.Rattlesnake, Sampler.MonteCarlo
- Since the creation of this test, the following main revisions have been performed:

1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates

2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.223 FRAMEWORK CODEINTERFACETESTS RATTLESNAKEINTERFACE.TESTMCYAK

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RattlesnakeInterface/test_perturb_yak_only.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RattlesnakeInterface.testMCYAK
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RattlesnakeInterface
```

- Test Description:
 - An example of using the code interface RattleSnake when XS need to be perturbed. This test is aimed to check the functionality (running the code) of the Rattlesnake interface (perturbing only YAK library) when a MonteCarlo sampling approach is used.
- Original Author:
 - wangc
- Creation date:
 - 2016-04-21
- The classes tested in this test are:
 - Models.Code.Rattlesnake, Sampler.MonteCarlo
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc

- date : 2016-08-04
 - description: Modify test to perturb transport XS and regold the tests
2. revision info:
- author : talbpaul
 - date : 2016-09-15
 - description: Test updates
3. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.224 FRAMEWORK CODEINTERFACETESTS COBRATF.TEST1

This test can be found at “./raven/tests/framework/CodeInterfaceTests/CobraTF/test1_cobratf_code_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/CobraTF.test1
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/CobraTF.test1
```

- Test Description:
 - An example of using the CobraTF code interface. This test is aimed to test the mechanics of the interface using a MonteCarlo sampling strategy.
- Original Author:
 - jyoo,alptezbasaran
- Creation date:
 - 2018-04-03
- The classes tested in this test are:
 - Models.Code.CobraTF
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : jyoo
- date : 2018-04-03
- description: New CobraTF test case

2. revision info:

- author : alptezbasaran
- date : 2018-08-15
- description: Modification for new sampling method (generic)

3. revision info:

- author : alfoa
- date : 2020-10-31
- description: Added csv xml node in the Code block for showing how to use it.

2.3.225 FRAMEWORK CODEINTERFACETESTS COBRATF.TEST2

This test can be found at “./raven/tests/framework/CodeInterfaceTests/CobraTF/test2_cobratf_code_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/CobraTF.test2
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/CobraTF.test2
```

- Test Description:
 - An example of using the CobraTF code interface. This test is aimed to test the mechanics of the interface using two sampling strategies in cascade (Monte Carlo and Grid sampling).
- Original Author:
 - jyoo,alptezbasaran
- Creation date:
 - 2018-04-03
- The classes tested in this test are:

- Models.Code.CobraTF
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : jyoo
 - date : 2018-04-03
 - description: New CobraTF test case
 2. revision info:
 - author : alptezbasaran
 - date : 2018-08-15
 - description: Modification for new sampling method (generic)
 3. revision info:
 - author : alfoa
 - date : 2020-10-31
 - description: Added csv xml node in the Code block for showing how to use it.

2.3.226 FRAMEWORK CODEINTERFACETESTS COBRATF.TEST3

This test can be found at “./raven/tests/framework/CodeInterfaceTests/CobraTF/test3_cobratf_code_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/CobraTF.test3
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/CobraTF.test3
```

- Test Description:
 - An example of using the CobraTF code interface. This test is aimed to test the mechanics of the interface using two supplementary input files (vuq_params.txt and vuq_mult.txt). All input files are to be perturbed
- Original Author:
 - alptezbasaran
- Creation date:

- 2018-07-22
- The classes tested in this test are:
 - Models.Code.CobraTF
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alptezbasaran
 - date : 2018-07-22
 - description: New CobraTF test case

2.3.227 FRAMEWORK CODEINTERFACETESTS COBRATF.TEST4

This test can be found at “./raven/tests/framework/CodeInterfaceTests/CobraTF/test4_cobratf_code_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/CobraTF.test4
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/CobraTF.test4
```

- Test Description:
 - An example of using the CobraTF code interface. This test is aimed to test the mechanics of the interface using a supplementary input file (vuq_params.txt). All input files are to be perturbed. Newly added heat slab output parser capabilities are tested.
- Original Author:
 - alptezbasaran
- Creation date:
 - 2018-07-24
- The classes tested in this test are:
 - Models.Code.CobraTF
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : alptezbasaran
- date : 2018-07-24
- description: New CobraTF test case

2.3.228 FRAMEWORK CODEINTERFACETESTS COBRATF.TEST5

This test can be found at “./raven/tests/framework/CodeInterfaceTests/CobraTF/test5_cobratf_code_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/CobraTF.test5
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/CobraTF.test5
```

- Test Description:
 - An example of using the CobraTF code interface. This test is aimed to test the output conversion if input file name is 'deck.inp'
- Original Author:
 - alptezbasaran
- Creation date:
 - 2018-07-26
- The classes tested in this test are:
 - Models.Code.CobraTF
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alptezbasaran
 - date : 2018-07-26
 - description: New CobraTF test case

2.3.229 FRAMEWORK CODEINTERFACETESTS RELAP5.RELAP5INTERFACETESTSINGLERUN

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RELAP5/test_relap5_code_interface_single_run.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5interfaceTestSi
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5inter
```

- Test Description:
 - An example of using the RELAP5 code interface with a SingleRun step. This test is aimed to test the mechanics of the interface (no executable).
- Original Author:
 - alfoa
- Creation date:
 - 2017-04-01
- The classes tested in this test are:
 - Models.Code.RELAP5

2.3.230 FRAMEWORK CODEINTERFACETESTS RELAP5.RELAP5INTERFACETESTALIASALIAS

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RELAP5/test_relap5_code_interface_alias.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5interfaceTestAl
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5inter
```

- Test Description:

- An example of using the RELAP5 code interface. This test is aimed to test the mechanics of the interface (no executable), when the RAVEN alias system is used.
- Original Author:
 - alfoa
- Creation date:
 - 2016-11-28
- The classes tested in this test are:
 - Models.Code.RELAP5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 2. revision info:
 - author : alfoa
 - date : 2020-10-31
 - description: Added csv xml node in the Code block for showing how to use it.

2.3.231 FRAMEWORK CODEINTERFACETESTS RELAP5.RELAP5INTERFACEMULTDECKTEST

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RELAP5/test_relap5_code_interface_multideck.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5interfaceMultDe
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5inter
```

- Test Description:
 - An example of using the Relap5 code interface. This test is aimed to test the mechanics of the interface (no executable) when a multi-deck type of input needs to be perturbed.

- Original Author:
 - alfoa
- Creation date:
 - 2016-05-03
- The classes tested in this test are:
 - Models.Code.Relap5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.232 FRAMEWORK CODEINTERFACETESTS RELAP5.RELAP5INTERFACEMULTDECKTEST

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RELAP5/test_relap5_code_interface_multideck_choosing_deck_output.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5interfaceMultDe
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5inter
```

- Test Description:
 - An example of using the RELAP5 code interface. This test is aimed to test the mechanics of the interface (no executable), when a multi deck input is used (and needs to be perturbed).
- Original Author:

- alfoa
- Creation date:
 - 2016-07-07
- The classes tested in this test are:
 - Models.Code.Relap5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.233 FRAMEWORK CODEINTERFACETESTS RELAP5.RELAP5INTERFACETESTALIASANDM

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RELAP5/test_relap5_code_ensemble_alias_metadata.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5interfaceTestAl
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5inter
```

- Test Description:
 - An example of using the RELAP5 code interface. This test is aimed to test the mechanics of the interface (no executable), when the RAVEN alias system is used and some metadata (i.e. restart prefix) needs to be passed in. This test executes 2 relap5 runs for each realization: the first one establishes the steady state, the second one restarts the calculation and runs a transient.
- Original Author:

- alfoa
- Creation date:
 - 2017-02-19
- The classes tested in this test are:
 - Models.Code.RELAP5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 2. revision info:
 - author : alfoa
 - date : 2019-02-13
 - description: Modified description

2.3.234 FRAMEWORK CODEINTERFACETESTS RELAP5.RELAP5INTERFACEOPERATORXMLN

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RELAP5/test_relap5_code_interface_operator.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5interfaceOperato
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5inter
```

- Test Description:
 - An example of using the RELAP5 code interface. This test is aimed to test the mechanics of the interface (no executable).
- Original Author:
 - alfoa
- Creation date:

- 2019-02-04
- The classes tested in this test are:
 - Models.Code.RELAP5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2019-02-04
 - description: Adding this test description.

2.3.235 FRAMEWORK CODEINTERFACETESTS RELAP5.INSSRELAP5JAPANINTERFACESAMP

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RELAP5/test_relap5_code_inss.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RELAP5.INSSrelap5JapanInterf
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RELAP5.INSSrelap5Ja
```

- Test Description:
 - An example of using the RELAP5 code interface (modified version of INSS (Japan)). This test is aimed to test the mechanics of the interface (no executable), that perturbs the RELAP5 input deck and the auxiliary file that the RELAP5 version by INSS reads.
- Original Author:
 - alfoa
- Creation date:
 - 2016-07-21
- The classes tested in this test are:
 - Models.Code.Relap5inssJp
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : alfoa
 - date : 2016-10-24
 - description: finalized branch
2. revision info:
- author : alfoa
 - date : 2016-10-25
 - description: added xsd
3. revision info:
- author : alfoa
 - date : 2016-10-25
 - description: ok
4. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.236 FRAMEWORK CODEINTERFACETESTS RELAP5.RELAP5INTERFACEDYNAMICET

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RELAP5/test_relap5_code_interface_dynamic_event_tree.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5interfaceDynamici
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5inter
```

- Test Description:
 - An example of using the RELAP5 code interface with the Dynamic Event Tree approach (only aleatory uncertainties). This test shows how to set up the Dynamic Event Tree for RELAP5 (i.e. usage of trips) and aliases.
- Original Author:
 - alfoa
- Creation date:

– 2020-11-30

- The classes tested in this test are:
 - Models.Code.RELAP5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2020-12-01
 - description: Added hierarchical dataset

2.3.237 FRAMEWORK CODEINTERFACETESTS RELAP5.RELAP5INTERFACEHYBRIDDYNAMI

This test can be found at “./raven/tests/framework/CodeInterfaceTests/RELAP5/test_relap5_code_interface_hybrid_dynamic_event_tree.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5interfaceHybrid
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/RELAP5.RELAP5inter
```

- Test Description:
 - An example of using the RELAP5 code interface with the Hybrid Dynamic Event Tree approach (aleatory uncertainties and epistemic uncertainties). This test shows how to set up the Dynamic Event Tree for RELAP5 (i.e. usage of trips) and aliases.
- Original Author:
 - alfoa
- Creation date:
 - 2020-11-30
- The classes tested in this test are:
 - Models.Code.RELAP5
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : alfoa
- date : 2020-12-01
- description: Added hierarchical dataset

2.3.238 FRAMEWORK CODEINTERFACETESTS ACCELERATEDCFD.PERTURBACFD1

This test can be found at “./raven/tests/framework/CodeInterfaceTests/AcceleratedCFD/test_perturb_acdf.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/AcceleratedCFD.perturbACFD1
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/AcceleratedCFD.perturbACFD1
```

- Test Description:

- An example of using the AcceleratedCFD code interface. This test is aimed to test the mechanics of the interface (no executable).

- Original Author:

- alfoa

- Creation date:

- 2020-11-03

- The classes tested in this test are:

- Models.Code.AcceleratedCFD

2.3.239 FRAMEWORK CODEINTERFACETESTS PHISICS.MRTAU

This test can be found at “./raven/tests/framework/CodeInterfaceTests/PHISICS/test_mrtau_standalone.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/PHISICS.mrtau
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/PHISICS.mrtau
```

- Test Description:
 - This test is aimed to test the mechanics of the interface between RAVEN and PHISICS, using the burnup code MRTAU. The decay constant of the PU241 is perturbed and the mass of the NP237. NOTE: The input files and data have been epurated from nuclear data; consequentially the case is not runnable for real with PHISICS (MRTAU). The code will error out.
- Original Author:
 - rouxpn
- Creation date:
 - 2018-04-23
- The classes tested in this test are:
 - Models.Code.Phisics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-07-08
 - description: modified to make it work and to remove nuclear data

2.3.240 FRAMEWORK CODEINTERFACETESTS PHISICS.PHISICS

This test can be found at “./raven/tests/framework/CodeInterfaceTests/PHISICS/test_phisics_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/PHISICS.phisics
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/PHISICS.phisics
```

- Test Description:

- This test is aimed to test the mechanics of the interface between RAVEN and PHISICS, using the full-blonde PHISICS executable. Qvalues, decay constants, initial densities and cross sections get perturbed. NOTE: The input files and data have been epurated from nuclear data; consequentially the case is not runnable for real with PHISICS. The code will error out.
- Original Author:
 - rouxpn
- Creation date:
 - 2018-04-23
- The classes tested in this test are:
 - Models.Code.Phisics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-07-08
 - description: modified to make it work and to remove nuclear data

2.3.241 FRAMEWORK CODEINTERFACETESTS PHISICS.PHISICSRELAP5

This test can be found at “./raven/tests/framework/CodeInterfaceTests/PHISICS/test_relapPhisics_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests/PHISICS.physicsRelap5
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests/PHISICS.physicsRelap5
```

- Test Description:
 - This test is aimed to test the mechanics of the combined interface PHISICS/RELAP5 using the RELAP5 (coupled with PHISICS) executable. The density of the I135 (PHISICS side) and the initial temperature for time-dep volume 201 are perturbed. NOTE: The input files and data have been epurated from nuclear data; consequentially the case is not runnable for real with PHISICS and RELAP5-3D coupled. The coupled suite will error out.

- Original Author:
 - rouxpn
- Creation date:
 - 2018-04-25
- The classes tested in this test are:
 - Models.Code.PhysicsRelap5
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : rouxpn
 - date : 2018-08-08
 - description: PHYSICS RELAP suite test case added

2.3.242 FRAMEWORK CODEINTERFACETESTS.MOOSEPARSER

This test can be found at “./raven/tests/framework/CodeInterfaceTests/MOOSEparser/test_MOOSE_parser.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.MOOSEparser
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.MOOSEparser
```

- Test Description:
 - A check to make sure the Raven produced input file is the same as the original parsed MOOSE input file.
- Original Author:
 - zabrax
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.Code.MooseBasedApp

2.3.243 FRAMEWORK CODEINTERFACETESTS.MOOSE VECTOR PARSER

This test can be found at “./raven/tests/framework/CodeInterfaceTests/MOOSEparser/test_MOOSE_vector_parser.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/CodeInterfaceTests.MOOSE_vector_parser
```

or

```
./run_framework_tests --re=framework/CodeInterfaceTests.MOOSE_vector_parser
```

- Test Description:
 - Test the MOOSE interface capability to perturb the element in vector variable
- Original Author:
 - wangc
- Creation date:
 - 2021-08-06
- The classes tested in this test are:
 - Models.Code.MooseBasedApp

2.3.244 FRAMEWORK PCA SPARSEGRID NORMAL

This test can be found at “./raven/tests/framework/pca_sparseGridCollocation/test_scgpc_normal.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sparseGrid/normal
```

or

```
./run_framework_tests --re=framework/pca_sparseGrid/normal
```

- Test Description:
 - Tests the SparseGridCollocation sampler combined with input reductions via PCA method, using correlated multivariate normal distributions. Uses distributions with nonzero means.

- Original Author:
 - wangc
- Creation date:
 - 2015-11-23
- The classes tested in this test are:
 - Samplers.SparseGridCollocation,SupervisedLearning.GaussPolynomialROM

2.3.245 FRAMEWORK PCA SPARSEGRID MVNUNCORRELATED

This test can be found at “./raven/tests/framework/pca_sparseGridCollocation/test_scgpc_uncorrelatedMVN.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sparseGrid/MVNUncorrelated
```

or

```
./run_framework_tests --re=framework/pca_sparseGrid/MVNUncorrelated
```

- Test Description:
 - Tests the SparseGridCollocation sampler combined with input reductions via PCA method, using uncorrelated multivariate normal distributions.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-23
- The classes tested in this test are:
 - Samplers.SparseGridCollocation,SupervisedLearning.GaussPolynomialROM

2.3.246 FRAMEWORK PCA SPARSEGRID MVNCORRELATED

This test can be found at “./raven/tests/framework/pca_sparseGridCollocation/test_scgpc_correlatedMVN.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sparseGrid/MVNCorrelated
```

or

```
./run_framework_tests --re=framework/pca_sparseGrid/MVNCorrelated
```

- Test Description:
 - Tests the SparseGridCollocation sampler combined with input reductions via PCA method, using correlated multivariate normal distributions.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-23
- The classes tested in this test are:
 - Samplers.SparseGridCollocation,SupervisedLearning.GaussPolynomialROM

2.3.247 FRAMEWORK PCA SPARSEGRID ATTENUATIONTEST

This test can be found at “./raven/tests/framework/pca_sparseGridCollocation/test_attenuation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_sparseGrid/attenuationTest
```

or

```
./run_framework_tests --re=framework/pca_sparseGrid/attenuationTest
```

- Test Description:

- Tests the SparseGridCollocation sampler combined with input reductions via PCA method, using uncorrelated multivariate normal distributions.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-23
- The classes tested in this test are:
 - Samplers.SparseGridCollocation,SupervisedLearning.GaussPolynomialROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject

2.3.248 FRAMEWORK POSTPROCESSORS METRIC TEST METRIC

This test can be found at “./raven/tests/framework/PostProcessors/Metrics/test_metric.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_metric
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_metric
```

- Test Description:
 - This test checks the Metric PostProcessor
- Original Author:
 - wangc
- Creation date:
 - 2017-08-29

- The classes tested in this test are:
 - PostProcessors.Metric
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-06
 - description: convert to using new data objects
 2. revision info:
 - author : wangc
 - date : 2017-11-20
 - description: restructure metric system, add time-dependent capability

2.3.249 FRAMEWORK POSTPROCESSORS METRIC TEST MULTIPLE INPUT OBJECTS

This test can be found at “./raven/tests/framework/PostProcessors/Metrics/test_metric_multiple_input_objects.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_multiple_input_objects
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_multiple_input_objects
```

- Test Description:
 - This test checks the Metric PostProcessor to accept multiple input data objects
- Original Author:
 - wangc
- Creation date:
 - 2017-08-30
- The classes tested in this test are:
 - PostProcessors.Metric

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2017-12-06
- description: convert to using new data objects

2. revision info:

- author : wangc
- date : 2017-11-20
- description: restructure metric system, add time-dependent capability

2.3.250 FRAMEWORK POSTPROCESSORS METRIC TEST METRIC SKL

This test can be found at “./raven/tests/framework/PostProcessors/Metrics/test_metric_skl.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_metric_skl
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_metric_skl
```

- Test Description:
 - This test checks metrics from ScikitLearn library
- Original Author:
 - wangc
- Creation date:
 - 2017-08-30
- The classes tested in this test are:
 - PostProcessors.Metric
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul

- date : 2019-01-09
 - description: no printing directly from postprocessor to file
2. revision info:
- author : wangc
 - date : 2017-12-06
 - description: convert to using new data objects
3. revision info:
- author : wangc
 - date : 2017-11-20
 - description: restructure metric system, add time-dependent capability

2.3.251 FRAMEWORK POSTPROCESSORS METRIC TEST COMPARISON STATS METRICS

This test can be found at “./raven/tests/framework/PostProcessors/Metrics/test_comparison_stats_metrics.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_comparison_stats_met.
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_comparison.
```

- Test Description:
 - This test checks the Comparison Statistics Metric
- Original Author:
 - joshua-cogliati-inl
- Creation date:
 - 2017-09-12
- The classes tested in this test are:
 - PostProcessors.Metric
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2017-12-06
- description: convert to using new data objects

2.3.252 FRAMEWORK POSTPROCESSORS METRIC TEST COMPARISON STATS METRICS GRID

This test can be found at “./raven/tests/framework/PostProcessors/Metrics/test_comparison_stats_metrics_grid.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_comparison_stats_met
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_comparison
```

- Test Description:
 - This test checks the Comparison Statistics Metrics with a Grid.
- Original Author:
 - joshua-cogliati-inl
- Creation date:
 - 2017-09-13
- The classes tested in this test are:
 - PostProcessors.Metric
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-06
 - description: convert to using new data objects

2.3.253 FRAMEWORK POSTPROCESSORS METRIC TEST COMPARISON STATS METRICS

This test can be found at “./raven/tests/framework/PostProcessors/Metrics/test_comparison_stats_metrics_dists.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_comparison_stats_metrics_dists.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_comparison_stats_metrics_dists.xml
```

- Test Description:
 - This test checks the Comparison Statistics Metric
- Original Author:
 - joshua-cogliati-inl
- Creation date:
 - 2017-09-12
- The classes tested in this test are:
 - PostProcessors.Metric
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-06
 - description: convert to using new data objects

2.3.254 FRAMEWORK.TEST DISTRIBUTIONS

This test can be found at “./raven/tests/framework/PostProcessors/Metrics/unit_test_comparison_statistics.py”. This test can be called executing the following command:

```
./run_tests --re=framework.test_distributions
```


or

```
./run_framework_tests --re=framework.test_distributions
```

- Test Description:
 - This test is a Unit Test for the comparison statistics metric. It checks all the functions that are available to RAVEN internally.
- Original Author:
 - coglj
- Creation date:
 - 2017-09-08
- The classes tested in this test are:
 -
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-10
 - description: Added Log Uniform distribution unit test

2.3.255 FRAMEWORK POSTPROCESSORS METRIC TESTMETRICTD

This test can be found at “./raven/tests/framework/PostProcessors/Metrics/test_metric_td.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/testMetricTD
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/testMetricTD
```

- Test Description:
 - This test checks the Metric PostProcessor to handle time-dependent data

- Original Author:
 - wangc
- Creation date:
 - 2017-11-20
- The classes tested in this test are:
 - PostProcessors.Metric
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: no writing directly to files from postprocessors

2.3.256 FRAMEWORK POSTPROCESSORS METRIC TEST METRIC SCIPY

This test can be found at “./raven/tests/framework/PostProcessors/Metrics/test_metric_scipy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_metric_scipy
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_metric_scipy
```

- Test Description:
 - This test checks metrics from Scipy library
- Original Author:
 - wangc
- Creation date:
 - 2018-02-16
- The classes tested in this test are:
 - PostProcessors.Metric

2.3.257 FRAMEWORK POSTPROCESSORS METRIC TEST METRIC SCIPY BOOLEAN

This test can be found at “./raven/tests/framework/PostProcessors/Metrics/test_metric_scipy_boolean.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_metric_scipy_boolean
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_metric_scipy_boolean
```

- Test Description:
 - This test checks metrics from Scipy library
- Original Author:
 - wangc
- Creation date:
 - 2018-02-16
- The classes tested in this test are:
 - PostProcessors.Metric

2.3.258 FRAMEWORK POSTPROCESSORS METRIC TEST DTW

This test can be found at “./raven/tests/framework/PostProcessors/Metrics/test_dtw.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_dtw
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_dtw
```

- Test Description:
 - This test checks the Metric PostProcessor with DTW metric

- Original Author:
 - wangc
- Creation date:
 - 2018-02-20
- The classes tested in this test are:
 - PostProcessors.Metric
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: no writing directly to files from postprocessors

2.3.259 FRAMEWORK POSTPROCESSORS VALUEDURATION.BASIC

This test can be found at “./raven/tests/framework/PostProcessors/ValueDuration/basic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ValueDuration.Basic
```

or

```
./run_framework_tests --re=framework/PostProcessors/ValueDuration.Basic
```

- Test Description:
 - Tests the basic functionality of the ValueDuration postprocessor to create their unique brand of cumulative histograms.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-08-28
- The classes tested in this test are:
 - PostProcessors.ValueDuration

2.3.260 FRAMEWORK POSTPROCESSORS BASICSTATISTICS GRID ANALYTIC

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/grid_analytic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/grid_analytic
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/grid_analytic
```

- Test Description:
 - This test checks all the basic statistics on analytic values using a grid sampling; however, the analytic models are not yet documented.
- Original Author:
 - alfoa
- Creation date:
 - 2015-11-21
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-05
 - description: convert test to use the new dataobjects
 2. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.261 FRAMEWORK POSTPROCESSORS BASICSTATISTICS GRID INVALUE

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/grid_inValue.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/grid_inValue
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/grid_in
```

- Test Description:
 - This test checks many basic statistics using a grid sampling.
- Original Author:
 - alfoa
- Creation date:
 - 2015-12-16
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-05
 - description: convert test to use the new dataobjects
 2. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.262 FRAMEWORK POSTPROCESSORS BASICSTATISTICS MC

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/mc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/mc
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/mc
```

- Test Description:
 - This test checks basic statistics on Monte Carlo samples.
- Original Author:
 - alfoa
- Creation date:
 - 2015-11-18
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-05
 - description: convert test to use the new dataobjects
 2. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.263 FRAMEWORK POSTPROCESSORS BASICSTATISTICS.MCFLOATPERCENTILE

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/mc_float_percentile.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics.mcFloatPercentile
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics.mcFloat
```

- Test Description:
 - This test checks basic statistics on Monte Carlo samples, requesting percentiles less than 1 percent
- Original Author:
 - alfoa
- Creation date:
 - 2017-03-26
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-05
 - description: convert test to use the new dataobjects

2.3.264 FRAMEWORK POSTPROCESSORS BASICSTATISTICS GRID ANALYTIC

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/stratified_analytic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/grid_analytic
```

or


```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/grid_a
```

- Test Description:
 - This test checks basic statistics on Stratified samples
- Original Author:
 - alfoa
- Creation date:
 - 2015-11-22
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-05
 - description: convert test to use the new dataobjects
 2. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.265 FRAMEWORK POSTPROCESSORS BASICSTATISTICS FACTORIAL ANALYTIC

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/factorial_analytic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/factorial_analyt
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/factor
```

- Test Description:
 - This test checks basic statistics on Factorial samples.
- Original Author:
 - alfoa
- Creation date:
 - 2015-11-22
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-05
 - description: convert test to use the new dataobjects
 2. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.266 FRAMEWORK POSTPROCESSORS BASICSTATISTICS RESPONSESURFACE-DOE ANALYTIC

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/responseSurfaceDoE_analytic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/responseSurfaceD
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/respon.
```

- Test Description:
 - This test checks the basic statistics on Response Surface Design of Experiment samples
- Original Author:
 - alfoa
- Creation date:
 - 2015-11-22
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-05
 - description: convert test to use the new dataobjects
 2. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.267 FRAMEWORK POSTPROCESSORS BASICSTATISTICS MEDIANANDPERCENTILE

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/test_median_and_percentile.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/medianAndPercent.
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/median
```

- Test Description:
 - This requirements test checks median calculation and the percentile calculation. This test use CustomSampler to read a pre-generated data and use BasicStatistic PostProcessor to output the median and the percentile for some variables. In median calculations, RAVEN will gives a 50 percentile. The interpolation method to use when the desired percentile lies between two data points i, j : RAVEN will return the midpoint: $(i+j)/2$.
- Original Author:
 - ZHOUI2
- Creation date:
 - 2020-10-08
- The classes tested in this test are:
 - PostProcessors.BasicStatistics

2.3.268 FRAMEWORK POSTPROCESSORS BASICSTATISTICS PRINTXML

This test can be found at “. /raven/tests/framework/PostProcessors/BasicStatistics/print_xml.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/printXml
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/printXml
```

- Test Description:
 - This test checks the ability of the basic statistics PP to print RAVEN XML outputs.
- Original Author:
 - talbpaul
- Creation date:

– 2016-05-10

- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-05
 - description: convert test to use the new dataobjects
 2. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.
 3. revision info:
 - author : talbpaul
 - date : 2020-06-26
 - description: greatly increased numerical tolerance due to collinearity

2.3.269 FRAMEWORK POSTPROCESSORS BASICSTATISTICS SENSITIVITY

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/sensitivity.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/sensitivity
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/sensitivity
```

- Test Description:
 - This test checks the sensitivities (and other metrics) calculated by basic statistics PP
- Original Author:

- wangc
- Creation date:
 - 2015-12-10
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-05
 - description: convert test to use the new dataobjects
 2. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.270 FRAMEWORK POSTPROCESSORS BASICSTATISTICS.SENSITIVITYONLY

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/sensitivity_only.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics.sensitivityOnly
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics.sensitivityOnly
```

- Test Description:
 - This test checks the sensitivities only calculated by basic statistics PP
- Original Author:

- alfoa
- Creation date:
 - 2017-07-18
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-05
 - description: convert test to use the new dataobjects

2.3.271 FRAMEWORK POSTPROCESSORS BASICSTATISTICS TIMEDEPENDENT

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/time_dep.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/timeDependent
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/timeDep
```

- Test Description:
 - This tests time-dependent basic statistics.
- Original Author:
 - alfoa
- Creation date:
 - 2016-06-20
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2017-12-05
- description: convert test to use the new dataobjects

2. revision info:

- author : wangc
- date : 2018-12-13
- description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.272 FRAMEWORK POSTPROCESSORS BASICSTATISTICS TIMEDEPENDENTA-SYNCHISTORIES

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/time_dep_asyncHists.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/timeDependentAsyn
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/timeDep
```

- Test Description:
 - This test checks time-dependent basic statistics with histories that are not synchronized a priori.
- Original Author:
 - alfoa
- Creation date:
 - 2016-06-21
- The classes tested in this test are:
 - PostProcessors.BasicStatistics

- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-05
 - description: convert test to use the new dataobjects
 2. revision info:
 - author : wangc
 - date : 2017-12-20
 - description: convert test to use the new DataObjects with the new structure of basic statistic
 3. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.273 FRAMEWORK POSTPROCESSORS BASICSTATISTICS VARIATIONCOEFFICIENT

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/variationCoefficient.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/variationCoefficient
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/variationCoefficient
```

- Test Description:
 - This test is used to test the defect mentioned in issue #666 This test will make sure the expectedValue and the variationCoefficient are correctly computed. If the expectedValues are zero, the variationCoefficient will be INF.
- Original Author:

- wangc
- Creation date:
 - 2015-11-21
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-05
 - description: convert test to use the new dataobjects

2.3.274 FRAMEWORK POSTPROCESSORS BASICSTATISTICS MC UNIFORM

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/mcUnif.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/mc_uniform
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/mc_uni
```

- Test Description:
 - Tests basic statistics on uniformly-sampled normally-distributed Monte Carlo sampling.
- Original Author:
 - mandd
- Creation date:
 - 2016-11-28
- The classes tested in this test are:
 - PostProcessors.BasicStatistics

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2017-12-05
- description: convert test to use the new dataobjects

2. revision info:

- author : wangc
- date : 2018-12-13
- description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.275 FRAMEWORK POSTPROCESSORS BASICSTATISTICS WRITEHEAVYXML

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/heavy_xml_write.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/writeHeavyXml
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/writeHeavyXml
```

- Test Description:
 - This tests time-dependent basic statistics writing a large number of entries to ensure good speed.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-03-16
- The classes tested in this test are:
 - PostProcessors.BasicStatistics,Files.DynamicXMLOutput

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2017-12-05
- description: convert test to use the new dataobjects

2. revision info:

- author : wangc
- date : 2018-12-13
- description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.276 FRAMEWORK POSTPROCESSORS BASICSTATISTICS TIMEDEPOUTCsv

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/test_timedep_out_csv.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/timeDepOutCsv
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/timeDep
```

- Test Description:
 - This test checks basic statistics for csv ouput
- Original Author:
 - alfoa
- Creation date:
 - 2017-03-29
- The classes tested in this test are:
 - PostProcessors.BasicStatistics

- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-20
 - description: convert test to use the new DataObjects with the new structure of basic statistic
 2. revision info:
 - author : wangc
 - date : 2018-05-15
 - description: remove unnecessary plots
 3. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.277 FRAMEWORK POSTPROCESSORS BASICSTATISTICS TIMEDEPDATASET

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/time_dep_dataset.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/timeDepDataset
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/timeDep
```

- Test Description:
 - This tests dumping time-dependent basic statistics into dataset
- Original Author:
 - wangc
- Creation date:

- 2018-08-25
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: avoid metadata output since metadata is added in basicStatistics
 2. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In this case, the time dependent standard errors will be printed out.

2.3.278 FRAMEWORK POSTPROCESSORS BASICSTATISTICS NML

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/test_not_multiple_linear.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics/nml
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics/nml
```

- Test Description:
 - This test checks sensitivity, variance dependent sensitivity calculations without using the multiple linear regression method. This means the inputs are treated uncorrelated with respect to the output space
- Original Author:
 - wangc

- Creation date:
 - 2018-09-08
- The classes tested in this test are:
 - PostProcessors.BasicStatistics

2.3.279 FRAMEWORK POSTPROCESSORS BASICSTATISTICS.STE

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/ste_mc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics.ste
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics.ste
```

- Test Description:
 - This test checks standard error calculations of statistics moments in basic statistics using Monte Carlo samples.
- Original Author:
 - wangc
- Creation date:
 - 2018-12-13
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. This test will test the Monte Carlo-based weighted standard errors calculations. The equivalent sample size will be equal the number of samples in this case, and then standard errors will be computed with unbiased standard deviations and/or the equivalent sample size.

2.3.280 FRAMEWORK POSTPROCESSORS BASICSTATISTICS.STEGRID

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/ste_grid.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics.steGrid
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics.steGrid
```

- Test Description:
 - This test checks standard error calculations of statistics moments in basic statistics using Grid samples.
- Original Author:
 - wangc
- Creation date:
 - 2018-12-13
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-12-13
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. This test will test the grid-based weighted standard errors calculations. The equivalent sample size will be computed first using the probability weights, and then standard errors will be computed with unbiased standard deviations and/or the equivalent sample size.

2.3.281 FRAMEWORK POSTPROCESSORS BASICSTATISTICS.TIMEDEPMETA

This test can be found at “./raven/tests/framework/PostProcessors/BasicStatistics/test_time_dep_meta.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/BasicStatistics.timeDepMeta
```

or

```
./run_framework_tests --re=framework/PostProcessors/BasicStatistics.timeDep
```

- Test Description:
 - This test checks the metadata printing of history set, the scalar meta data should be printed with the input of HistorySet, while vector meta data should be printed with output of HistorySet. See issue #986. With the fix of #986, The HistorySet will handle scalar and vector meta data separately.
- Original Author:
 - wangc
- Creation date:
 - 2019-05-10
- The classes tested in this test are:
 - PostProcessors.BasicStatistics, DataObjects.HistorySet

2.3.282 FRAMEWORK.SAFEST POINT PP

This test can be found at “./raven/tests/framework/PostProcessors/SafestPoint/test_safest_point.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.safest_point_pp
```

or

```
./run_framework_tests --re=framework.safest_point_pp
```

- Test Description:

- This test is about the identification of the Safest Point in a set of controllable and uncontrollable parameter. In order to do that, a LimitSurfaceSearch sampling is employed and sub-sequentially the PostProcessor of type SafestPoint is used.
- Original Author:
 - alfoa
- Creation date:
 - 2014-11-17
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch, Models.PostProcessor.SafestPoint, Steps.MultiRun
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
 2. revision info:
 - author : alfoa
 - date : 2015-05-19
 - description: Closes #176
 3. revision info:
 - author : alfoa
 - date : 2015-06-18
 - description: Changed Name of all DataObjects
 4. revision info:
 - author : talbpaul
 - date : 2015-07-07
 - description: standardized tests
 5. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
 6. revision info:
 - author : maljdan

- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

7. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

8. revision info:

- author : alfoa
- date : 2019-03-07
- description: Modified syntax in Functions as for issue #934

2.3.283 FRAMEWORK.SAFEST POINT CDF PP

This test can be found at “./raven/tests/framework/PostProcessors/SafestPoint/test_safest_point_cdf.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.safest_point_cdf_pp
```

or

```
./run_framework_tests --re=framework.safest_point_cdf_pp
```

- Test Description:
 - This test is about the identification of the Safest Point in a set of controllable and un-controllable parameter. The un-controllable parameter space is probability weighted in this case. In order to do that, a LimitSurfaceSearch sampling is employed and subsequently the PostProcessor of type SafestPoint is used.
- Original Author:
 - alfoa
- Creation date:
 - 2015-01-22
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch, Models.PostProcessor.SafestPoint, Steps.MultiRun
- Since the creation of this test, the following main revisions have been performed:

1. revision info:
 - author : mandd
 - date : 2015-04-17
 - description: conversion to Database and DataObjects
2. revision info:
 - author : alfoa
 - date : 2015-05-19
 - description: Closes #176
3. revision info:
 - author : talbpaul
 - date : 2015-06-04
 - description: regolding after SG feature ordering, also changed Adaptive sampler to LimitSurfaceSearch sampler
4. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
5. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
6. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
7. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.284 FRAMEWORK POSTPROCESSORS PARETOFRONTIERPOSTPROCESSOR.PARETOFRON

This test can be found at “./raven/tests/framework/PostProcessors/ParetoFrontierPostP
test_paretoFrontier.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ParetoFrontierPostProcessor.Pareto
```

or

```
./run_framework_tests --re=framework/PostProcessors/ParetoFrontierPostProc
```

- Test Description:
 - This post-processor identifies the points lying on the Pareto Frontier in a cost-value space
- Original Author:
 - mandd
- Creation date:
 - 2020-03-25
- The classes tested in this test are:
 - Models.PostProcessors.ParetoFrontier

2.3.285 FRAMEWORK POSTPROCESSORS PARETOFRONTIERPOSTPROCESSOR.PARETOFRON

This test can be found at “./raven/tests/framework/PostProcessors/ParetoFrontierPostPr test_paretoFrontierWithCostLimit.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ParetoFrontierPostProcessor.Pare
```

or

```
./run_framework_tests --re=framework/PostProcessors/ParetoFrontierPostProc
```

- Test Description:
 - This post-processor identifies the points lying on the Pareto Frontier in a cost-value space when cost limit is specified
- Original Author:
 - mandd
- Creation date:

- 2020-07-05

- The classes tested in this test are:
 - Models.PostProcessors.ParetoFrontier

2.3.286 FRAMEWORK POSTPROCESSORS PARETOFRONTIERPOSTPROCESSOR.PARETOFRONTIERPOSTPROCESSOR.PARETOFRONTIERPOSTPROCESSOR.PARETOFRONTIERPOSTPROCESSOR

This test can be found at “./raven/tests/framework/PostProcessors/ParetoFrontierPostProcessor/ParetoFrontierPostProcessor.test_paretoFrontierWithValueLimit.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ParetoFrontierPostProcessor.ParetoFrontierPostProcessor
```

or

```
./run_framework_tests --re=framework/PostProcessors/ParetoFrontierPostProcessor.ParetoFrontierPostProcessor
```

- Test Description:
 - This post-processor identifies the points lying on the Pareto Frontier in a cost-value space when value limit is specified.
- Original Author:
 - mandd
- Creation date:
 - 2020-07-05
- The classes tested in this test are:
 - Models.PostProcessors.ParetoFrontier

2.3.287 FRAMEWORK POSTPROCESSORS PARETOFRONTIERPOSTPROCESSOR.PARETOFRONTIERPOSTPROCESSOR.PARETOFRONTIERPOSTPROCESSOR.PARETOFRONTIERPOSTPROCESSOR

This test can be found at “./raven/tests/framework/PostProcessors/ParetoFrontierPostProcessor/ParetoFrontierPostProcessor.test_paretoFrontierWithBothLimits.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ParetoFrontierPostProcessor.ParetoFrontierPostProcessor
```

or

```
./run_framework_tests --re=framework/PostProcessors/ParetoFrontierPostProc
```

- Test Description:
 - This post-processor identifies the points lying on the Pareto Frontier in a cost-value space when cost and value limits are specified.
- Original Author:
 - mandd
- Creation date:
 - 2020-07-05
- The classes tested in this test are:
 - Models.PostProcessors.ParetoFrontier

2.3.288 FRAMEWORK POSTPROCESSORS PARETOFRONTIERPOSTPROCESSOR.PARETOFRON

This test can be found at “./raven/tests/framework/PostProcessors/ParetoFrontierPostPr test_paretoFrontierInverted.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ParetoFrontierPostProcessor.Pare
```

or

```
./run_framework_tests --re=framework/PostProcessors/ParetoFrontierPostProc
```

- Test Description:
 - This post-processor identifies the points lying on the Pareto Frontier in a cost-value space with data types inverted
- Original Author:
 - mandd
- Creation date:

– 2020-03-25

- The classes tested in this test are:
 - Models.PostProcessors.ParetoFrontier

2.3.289 FRAMEWORK TEST COMPARISON STATISTICS

This test can be found at “./raven/tests/framework/PostProcessors/OldComparisonStatistics/test_cc_stats.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/test_comparison_statistics
```

or

```
./run_framework_tests --re=framework/test_comparison_statistics
```

- Test Description:
 - Tests the comparison statistics class including both two PointSets and PointSet to distribution.
- Original Author:
 - cogljj
- Creation date:
 - 2014-10-16
- The classes tested in this test are:
 - ComparisonStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-10-17
 - description: Removed support for PointSet output for ComparisonStatisticsModule

2.3.290 FRAMEWORK POSTPROCESSORS LIMITSURFACE.TESTLIMITSURFACEPOSTPROCES

This test can be found at “./raven/tests/framework/PostProcessors/LimitSurface/test_LimitSurface_regressor_inverseWeight.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/LimitSurface.testLimitSurfacePost
```

or

```
./run_framework_tests --re=framework/PostProcessors/LimitSurface.testLimit
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to generate Limit Surfaces, using a regressor surrogate model instead of a classifier, from a pre-generated data set (in this case, generated with a MonteCarlo sampling), outputting the generated Limit Surface in DataObject.PointSet(s) reporting both transition boundaries (-1 1) or just one of them.
- Original Author:
 - alfoa
- Creation date:
 - 2014-07-10
- The classes tested in this test are:
 - Models.PostProcessors.LimitSurface, Functions.External, Models.ROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-06-02
 - description: Adding this test description.
 2. revision info:
 - author : alfoa
 - date : 2017-12-14
 - description: Moved LimitSurface Postprocessor tests in a specific directory (tests/framework/PostProcessors/LimitSurface) and updated for new DataObject structure

3. revision info:

- author : alfoa
- date : 2019-03-07
- description: Modified syntax in Functions as for issue #934

2.3.291 FRAMEWORK POSTPROCESSORS METRIC TEST CROSS VALIDATION

This test can be found at “./raven/tests/framework/PostProcessors/CrossValidations/test_cross_validation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_cross_validation
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_cross_validation
```

- Test Description:
 - This test checks the CrossValidation PostProcessor with KFold method
- Original Author:
 - wangc
- Creation date:
 - 2017-09-06
- The classes tested in this test are:
 - PostProcessors.CrossValidation
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-07
 - description: convert test to use the new dataobjects

2.3.292 FRAMEWORK POSTPROCESSORS METRIC TEST LABELKFOLD

This test can be found at “./raven/tests/framework/PostProcessors/CrossValidations/test_LabelKFold.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_LabelKFold
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_LabelKFold
```

- Test Description:
 - This test checks the CrossValidation PostProcessor with LabelKFold method
- Original Author:
 - wangc
- Creation date:
 - 2017-09-07
- The classes tested in this test are:
 - PostProcessors.CrossValidation
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-07
 - description: convert test to use the new dataobjects

2.3.293 FRAMEWORK POSTPROCESSORS METRIC TEST LEAVEONEOUT

This test can be found at “./raven/tests/framework/PostProcessors/CrossValidations/test_labelShuffleSplit.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_leaveOneOut
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_leaveOneOut
```

- Test Description:
 - This test checks the CrossValidation PostProcessor with LabelShuffleSplit method
- Original Author:
 - wangc
- Creation date:
 - 2017-09-07
- The classes tested in this test are:
 - PostProcessors.CrossValidation
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-07
 - description: convert test to use the new dataobjects

2.3.294 FRAMEWORK POSTPROCESSORS METRIC TEST LEAVEONEOUT

This test can be found at “./raven/tests/framework/PostProcessors/CrossValidations/test_leaveOneOut.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_leaveOneOut
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_leaveOneOut
```

- Test Description:
 - This test checks the CrossValidation PostProcessor with leaveOneOut method
- Original Author:

- wangc
- Creation date:
 - 2017-09-07
- The classes tested in this test are:
 - PostProcessors.CrossValidation
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-07
 - description: convert test to use the new dataobjects

2.3.295 FRAMEWORK POSTPROCESSORS METRIC TEST LEAVEPLABELOUT

This test can be found at “./raven/tests/framework/PostProcessors/CrossValidations/test_leavePLabelOut.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_leavePLabelOut
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_leavePLabelOut
```

- Test Description:
 - This test checks the CrossValidation PostProcessor with LeavePLabelOut method
- Original Author:
 - wangc
- Creation date:
 - 2017-09-07
- The classes tested in this test are:
 - PostProcessors.CrossValidation
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2017-12-07
- description: convert test to use the new dataobjects

2.3.296 FRAMEWORK POSTPROCESSORS METRIC TEST LEAVEPOUT

This test can be found at “./raven/tests/framework/PostProcessors/CrossValidations/test_leavePOut.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_leavePOut
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_leavePOut
```

- Test Description:

- This test checks the CrossValidation PostProcessor with leavePOut method

- Original Author:

- wangc

- Creation date:

- 2017-09-07

- The classes tested in this test are:

- PostProcessors.CrossValidation

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2017-12-07
- description: convert test to use the new dataobjects

2.3.297 FRAMEWORK POSTPROCESSORS METRIC TEST SHUFFLESPLIT

This test can be found at “./raven/tests/framework/PostProcessors/CrossValidations/test_shuffleSplit.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_shuffleSplit
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_shuffleSpl
```

- Test Description:
 - This test checks the CrossValidation PostProcessor with shuffle and split method
- Original Author:
 - wangc
- Creation date:
 - 2017-09-07
- The classes tested in this test are:
 - PostProcessors.CrossValidation
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-07
 - description: convert test to use the new dataobjects

2.3.298 FRAMEWORK POSTPROCESSORS METRIC TEST STRATIFIEDKFOLD

This test can be found at “./raven/tests/framework/PostProcessors/CrossValidations/test_stratifiedKFold.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_stratifiedKFold
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_stratified
```

- Test Description:
 - This test checks the CrossValidation PostProcessor with Stratified K-Folds method
- Original Author:
 - wangc
- Creation date:
 - 2017-09-07
- The classes tested in this test are:
 - PostProcessors.CrossValidation
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-07
 - description: convert test to use the new dataobjects

2.3.299 FRAMEWORK POSTPROCESSORS METRIC TEST STRATIFIEDSHUFFLE-SPLIT

This test can be found at “./raven/tests/framework/PostProcessors/CrossValidations/test_stratifiedShuffleSplit.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_stratifiedShuffleSpl
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_stratified
```

- Test Description:
 - This test checks the CrossValidation PostProcessor with StratifiedShuffleSplit method
- Original Author:
 - wangc
- Creation date:

- 2017-09-07
- The classes tested in this test are:
 - PostProcessors.CrossValidation
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-07
 - description: convert test to use the new dataobjects

2.3.300 FRAMEWORK POSTPROCESSORS METRIC TEST LEAVEONELABELOUT

This test can be found at “./raven/tests/framework/PostProcessors/CrossValidations/test_leaveOneLabelOut.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Metric/test_leaveOneLabelOut
```

or

```
./run_framework_tests --re=framework/PostProcessors/Metric/test_leaveOneLabelOut
```

- Test Description:
 - This test checks the CrossValidation PostProcessor with LeaveOneLabelOut method
- Original Author:
 - wangc
- Creation date:
 - 2017-09-07
- The classes tested in this test are:
 - PostProcessors.CrossValidation
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-07
 - description: convert test to use the new dataobjects

2.3.301 FRAMEWORK POSTPROCESSORS FASTFOURIERTRANSFORM.BASIC

This test can be found at “./raven/tests/framework/PostProcessors/FastFourierTransform/basic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/FastFourierTransform.Basic
```

or

```
./run_framework_tests --re=framework/PostProcessors/FastFourierTransform.Basic
```

- Test Description:
 - Tests the basic functionality of the FastFourierTransform postprocessor to create a frequency-amplitude Fourier analysis of a signal.
The signals are created using Basic/dataGenerator.py, and use analytic Fourier-based signals. The first realization uses periods of 4, 8 and 20, and in the second realization the periods are 3.333, 13, and 50. At the corresponding periods (in the “fft_*.csv” files, under “signal_fft_period”), there should be a peak in the “signal_fft_amplitude” values.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-09-11
- The classes tested in this test are:
 - PostProcessors.FastFourierTransform

2.3.302 FRAMEWORK POSTPROCESSORS SAMPLESELECTOR.BASIC

This test can be found at “./raven/tests/framework/PostProcessors/SampleSelector/basic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/SampleSelector.Basic
```

or

```
./run_framework_tests --re=framework/PostProcessors/SampleSelector.Basic
```

- Test Description:
 - This test checks basic functionalities of the Sample Selector. The model multiplies the input x by 2.5 to obtain x_1 , and y is multiplied by 3.5 to obtain y_1 . x and y are sampled through a Monte Carlo sampler, with 10 realizations. The SampleSelector postprocessor is called several times, testing each of the selection methods.
- Original Author:
 - gm
- Creation date:
 - 2018-09-12
- The classes tested in this test are:
 - PostProcessors.SampleSelector
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-11-06
 - description: added index selection method to test

2.3.303 FRAMEWORK POSTPROCESSORS TOPOLOGICALPOSTPROCESSOR.TOPOLOGY SIMPLE

This test can be found at “./raven/tests/framework/PostProcessors/TopologicalPostProcessor/test_topology_simple.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TopologicalPostProcessor.topology
```

or

```
./run_framework_tests --re=framework/PostProcessors/TopologicalPostProcessor
```

- Test Description:
 - A simple example of the approximate Morse-Smale complex (AMSC) interface using a test function consisting of a 2D Gaussian with a single maximum and 4 local minimum occurring at the corners of the domain space. The hill in the middle is purposefully off-centered so as to create non-uniform cases at each corner allowing us to simplify

each local minimum in turn to create a 4 partition case, a 3 partition case, a 2 partition case, and a single partition case.

- Original Author:
 - maljdan
- Creation date:
 - 2015-09-02
- The classes tested in this test are:
 - PostProcessors.TopologicalDecomposition
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
 2. revision info:
 - author : maljdan
 - date : 2015-10-06
 - description: Correcting the user manual and reducing the sleepTime on these tests to reduce their total run time to 15 s on my local machine.
 3. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: Converted failing tests.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : maljdan
 - date : 2017-01-17
 - description: Adding test description.

2.3.304 FRAMEWORK POSTPROCESSORS TOPOLOGICALPOSTPROCESSOR.PERSISTENCE COUNT

This test can be found at “./raven/tests/framework/PostProcessors/TopologicalPostProcessor/test_persistence_count.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TopologicalPostProcessor.persistence
```

or

```
./run_framework_tests --re=framework/PostProcessors/TopologicalPostProcessor
```

- Test Description:
 - A simple example of the approximate Morse-Smale complex (AMSC) interface where select a persistence level using the count of points in each partition, that is if a partition has fewer than x points, it will be merged into a neighboring partition. Note, that all of the ”persistence” tests will use the Schwefel function for testing.
- Original Author:
 - maljdan
- Creation date:
 - 2015-09-21
- The classes tested in this test are:
 - PostProcessors.TopologicalDecomposition
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
 2. revision info:
 - author : maljdan
 - date : 2015-10-05
 - description: Removing the local fits from the topology PP and reducing the problem sizes for the persistence tests.

3. revision info:

- author : maljdan
- date : 2015-10-05
- description: Adjusting the Schwefel function’s domain to fit better with fewer data points.

4. revision info:

- author : maljdan
- date : 2015-10-06
- description: Correcting the user manual and reducing the sleepTime on these tests to reduce their total run time to 15 s on my local machine.

5. revision info:

- author : talbpaul
- date : 2016-02-08
- description: Converted failing tests.

6. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

7. revision info:

- author : maljdan
- date : 2017-01-17
- description: Adding test description.

2.3.305 FRAMEWORK POSTPROCESSORS TOPOLOGICALPOSTPROCESSOR.PERSISTENCE PROB

This test can be found at “./raven/tests/framework/PostProcessors/TopologicalPostProcessor/test_persistence_prob.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TopologicalPostProcessor.persistence
```

or

```
./run_framework_tests --re=framework/PostProcessors/TopologicalPostProcessor
```

- Test Description:

- A simple example of the approximate Morse-Smale complex (AMSC) interface where we select a persistence level based on a minimum amount of probability. That is, if the total probability weight of a partition is too small, then that partition will be merged into a neighboring partition given the normal rules of persistence simplification. Note, that all of the "persistence" tests will use the Schwefel function for testing.
- Original Author:
 - maljdan
- Creation date:
 - 2015-09-21
- The classes tested in this test are:
 - PostProcessors.TopologicalDecomposition
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
 2. revision info:
 - author : maljdan
 - date : 2015-10-05
 - description: Removing the local fits from the topology PP and reducing the problem sizes for the persistence tests.
 3. revision info:
 - author : maljdan
 - date : 2015-10-05
 - description: Adjusting the Schwefel function's domain to fit better with fewer data points.
 4. revision info:
 - author : maljdan
 - date : 2015-10-06
 - description: Correcting the user manual and reducing the sleepTime on these tests to reduce their total run time to 15 s on my local machine.
 5. revision info:
 - author : talbpaul

- date : 2016-02-08
- description: Converted failing tests.

6. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

7. revision info:

- author : maljdan
- date : 2017-01-17
- description: Adding test description.

2.3.306 FRAMEWORK POSTPROCESSORS TOPOLOGICALPOSTPROCESSOR.PERSISTENCE VALUE

This test can be found at “./raven/tests/framework/PostProcessors/TopologicalPostProcessor/test_persistence_value.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TopologicalPostProcessor.persistence
```

or

```
./run_framework_tests --re=framework/PostProcessors/TopologicalPostProcessor
```

- Test Description:

- A simple example of the approximate Morse-Smale complex (AMSC) interface where we select a persistence level based on the standard notion of the function value difference between the extrema and its nearest valued neighboring critical point. That is, larger peaks and valleys will persist longer than smaller “noisy” features. This is the standard definition of persistence used in Morse topology. Note, that all of the “persistence” tests will use the Schwefel function for testing.

- Original Author:

- maljdan

- Creation date:

- 2015-09-21

- The classes tested in this test are:
 - PostProcessors.TopologicalDecomposition
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
 2. revision info:
 - author : maljdan
 - date : 2015-10-05
 - description: Removing the local fits from the topology PP and reducing the problem sizes for the persistence tests.
 3. revision info:
 - author : maljdan
 - date : 2015-10-05
 - description: Adjusting the Schwefel function's domain to fit better with fewer data points.
 4. revision info:
 - author : maljdan
 - date : 2015-10-06
 - description: Correcting the user manual and reducing the sleepTime on these tests to reduce their total run time to 15 s on my local machine.
 5. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: Converted failing tests.
 6. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 7. revision info:
 - author : maljdan
 - date : 2017-01-17
 - description: Adding test description.

2.3.307 FRAMEWORK POSTPROCESSORS TOPOLOGICALPOSTPROCESSOR.PERSISTENCE FULL

This test can be found at “./raven/tests/framework/PostProcessors/TopologicalPostProcessor/test_persistence_full.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TopologicalPostProcessor.persistence
```

or

```
./run_framework_tests --re=framework/PostProcessors/TopologicalPostProcessor
```

- Test Description:
 - A simple example of the approximate Morse-Smale complex (AMSC) interface where no persistence simplification will be done. Note, that all of the ”persistence” tests will use the Schwefel function for testing.
- Original Author:
 - maljdan
- Creation date:
 - 2015-09-21
- The classes tested in this test are:
 - PostProcessors.TopologicalDecomposition
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
 2. revision info:
 - author : maljdan
 - date : 2015-10-05
 - description: Removing the local fits from the topology PP and reducing the problem sizes for the persistence tests.
 3. revision info:

- author : maljdan
 - date : 2015-10-05
 - description: Adjusting the Schwefel function’s domain to fit better with fewer data points.
4. revision info:
- author : maljdan
 - date : 2015-10-06
 - description: Correcting the user manual and reducing the sleepTime on these tests to reduce their total run time to 15 s on my local machine.
5. revision info:
- author : talbpaul
 - date : 2016-02-08
 - description: Converted failing tests.
6. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
7. revision info:
- author : maljdan
 - date : 2017-01-17
 - description: Adding test description.

2.3.308 FRAMEWORK POSTPROCESSORS TOPOLOGICALPOSTPROCESSOR.KNN

This test can be found at “./raven/tests/framework/PostProcessors/TopologicalPostProcessor/test_graph_knn.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TopologicalPostProcessor.knn
```

or

```
./run_framework_tests --re=framework/PostProcessors/TopologicalPostProcessor.knn
```

- Test Description:
 - A simple example of the approximate Morse-Smale complex (AMSC) interface that exercises the k-nearest neighbor graph structure as the underlying connectivity model for the point cloud. Note, each of the ”graph” test cases uses the GaussianPeaks test case which consists of 4 distinctly shaped Gaussian peaks in a 2D input domain.

- Original Author:
 - maljdan
- Creation date:
 - 2015-09-21
- The classes tested in this test are:
 - PostProcessors.TopologicalDecomposition
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
 2. revision info:
 - author : maljdan
 - date : 2015-10-06
 - description: Reducing the graph tests for the topology pp, and re-golding them, also adding a plotter to validate the results visually.
 3. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: Converted failing tests.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : maljdan
 - date : 2017-01-17
 - description: Adding test description.

2.3.309 FRAMEWORK POSTPROCESSORS TOPOLOGICALPOSTPROCESSOR.RELAXED BETA SKELETON

This test can be found at “./raven/tests/framework/PostProcessors/TopologicalPostProcessor/test_graph_bs.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TopologicalPostProcessor.relaxed
```

or

```
./run_framework_tests --re=framework/PostProcessors/TopologicalPostProcessor
```

- Test Description:
 - A simple example of the approximate Morse-Smale complex (AMSC) interface that exercises the beta skeleton graph structure as the underlying connectivity model for the point cloud. Note, each of the ”graph” test cases uses the GaussianPeaks test case which consists of 4 distinctly shaped Gaussian peaks in a 2D input domain.
- Original Author:
 - maljdan
- Creation date:
 - 2015-09-21
- The classes tested in this test are:
 - PostProcessors.TopologicalDecomposition
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
 2. revision info:
 - author : maljdan
 - date : 2015-10-06
 - description: Reducing the graph tests for the topology pp, and re-golding them, also adding a plotter to validate the results visually.
 3. revision info:

- author : talbpaul
- date : 2016-02-08
- description: Converted failing tests.

4. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

5. revision info:

- author : maljdan
- date : 2017-01-17
- description: Adding test description.

2.3.310 FRAMEWORK POSTPROCESSORS TOPOLOGICALPOSTPROCESSOR.RELAXED BETA SKELETON

This test can be found at “./raven/tests/framework/PostProcessors/TopologicalPostProcessor/test_graph_rbs.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TopologicalPostProcessor.relaxed
```

or

```
./run_framework_tests --re=framework/PostProcessors/TopologicalPostProcessor
```

- Test Description:
 - A simple example of the approximate Morse-Smale complex (AMSC) interface that exercises the relaxed beta skeleton graph structure as the underlying connectivity model for the point cloud. Note, each of the ”graph” test cases uses the GaussianPeaks test case which consists of 4 distinctly shaped Gaussian peaks in a 2D input domain.
- Original Author:
 - maljdan
- Creation date:
 - 2015-09-21
- The classes tested in this test are:

- PostProcessors.TopologicalDecomposition
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
 2. revision info:
 - author : maljdan
 - date : 2015-10-06
 - description: Reducing the graph tests for the topology pp, and re-golding them, also adding a plotter to validate the results visually.
 3. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: Converted failing tests.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : maljdan
 - date : 2017-01-17
 - description: Adding test description.

2.3.311 FRAMEWORK POSTPROCESSORS TOPOLOGICALPOSTPROCESSOR.INTERACTIVE UI

This test can be found at “./raven/tests/framework/PostProcessors/TopologicalPostProcessor/test_topology_ui.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TopologicalPostProcessor.interactive
```

or

```
./run_framework_tests --re=framework/PostProcessors/TopologicalPostProcessor
```

- Test Description:
 - This test exercises the user interface coupled with the Morse-Smale topology code. This test is basically a copy of test_graph_knn.xml, but it exercises our ability to load, run, and tear down a Pyside UI.
- Original Author:
 - maljdan
- Creation date:
 - 2016-03-23
- The classes tested in this test are:
 - PostProcessors.QTopologicalDecomposition
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-07-17
 - description: Working on updating the syntax of test_topology_ui to match current devel.
 2. revision info:
 - author : maljdan
 - date : 2017-01-17
 - description: Adding test description.
 3. revision info:
 - author : maljdan
 - date : 2017-05-09
 - description: Adding this test to the automated system.

2.3.312 FRAMEWORK POSTPROCESSORS REALIZATIONAVERAGER.BASIC

This test can be found at “./raven/tests/framework/PostProcessors/RealizationAverager/basic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/RealizationAverager.Basic
```

or


```
./run_framework_tests --re=framework/PostProcessors/RealizationAverager.Ba
```

- Test Description:
 - This test checks basic functionalities of the Realization Averager. The data is samples from a multiyear ARMA, with dimensions of 3 years and 10 time steps each. The RealizationAverager simply averages the three samples, maintaining the year and time dimensions. This test was checked analytically at creation to assure the average of the three samples is the resulting averaged values.
- Original Author:
 - talbpw
- Creation date:
 - 2019-07-02
- The classes tested in this test are:
 - PostProcessors.RealizationAverager

2.3.313 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR CLUSTERING KMEANS

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnKMeans.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/C
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPostL
```

- Test Description:
 - Tests clustering with KMeans and a pivot parameter.
- Original Author:
 - chenj

- Creation date:
 - 2016-02-26
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.314 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR CLUSTERING MINIBATCHKMEANS

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnMiniBatchKMeans.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnMiniBatchKMeans.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnMiniBatchKMeans.xml
```

- Test Description:
 - Tests clustering with MiniBatchKMeans and a pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-26
- The classes tested in this test are:

- DataMining

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2018-09-27
- description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.315 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR CLUSTERING MEANSHIFT

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnMeanShift.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnMeanShift.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnMeanShift.xml
```

- Test Description:

- Tests clustering with MeanShift and a pivot parameter.

- Original Author:

- chenj

- Creation date:

- 2016-02-26

- The classes tested in this test are:

- DataMining

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc

- date : 2018-09-27
- description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.316 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR CLUSTERING DBSCAN

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor Clustering/test_tdmSKLearnDBSCAN.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnDBSCAN.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnDBSCAN.xml
```

- Test Description:
 - Tests clustering with DBSCAN and a pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-26
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.317 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR CLUSTERING AFFINITYPROPOGATION

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnAffinityPropogation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPost
```

- Test Description:
 - Tests clustering with AffinityPropogation and a pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-26
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.318 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR CLUSTERING SPECTRALCLUSTERING

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnSpectralClustering.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPost
```

- Test Description:
 - Tests clustering with SpectralClustering with pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-26
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.319 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR CLUSTERING GAUSSIANMIXTURE

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnGaussianMixture.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPost
```

- Test Description:
 - Tests mixtures with Gaussian Mixture Model and a pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-26
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.
 2. revision info:
 - author : alfoa
 - date : 2019-06-25
 - description: init_param changed from wc to kmeans because the wc option has been removed in scikitlearn v. 0.21

2.3.320 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR CLUSTERING VARIATIONALGMM

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnVariationalGMM.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnVariationalGMM.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/Clustering/test_tdmSKLearnVariationalGMM.xml
```

- Test Description:
 - Testing clustering with VBGMM (Variational Bayesian Gaussian Mixture Modeling) and pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-26
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.321 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION EXACTPCA

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnExactPCA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnExactPCA.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnExactPCA.xml
```

- Test Description:
 - Tests decomposition with PCA and a pivot parameter.
- Original Author:

- chenj
- Creation date:
 - 2016-02-29
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.322 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION RANDOMIZEDPCA

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnRandomizedPCA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnRandomizedPCA.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnRandomizedPCA.xml
```

- Test Description:
 - Tests decomposition with RandomizedPCA and a pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-29

- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.323 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION KERNELPCA

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnKernelPCA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnKernelPCA.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnKernelPCA.xml
```

- Test Description:
 - Tests decomposition with KernelPCA and a pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-29
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2018-09-27
- description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.324 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION SPARSEPCA

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnSparsePCA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPost
```

- Test Description:
 - Tests decomposition with SparsePCA and a pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-26
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.325 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION MINIBATCHSPARSEPCA

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnMiniBatchSparsePCA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPost
```

- Test Description:
 - Tests decomposition with MiniBatchSparsePCA and a pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-29
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.326 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION TRUNCATEDSVD

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnTruncatedSVD.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPost
```

- Test Description:
 - Tests decomposition with TruncatedSVD and a pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-26
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.327 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION FASTICA

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnFastICA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPost
```

- Test Description:
 - Tests decomposition with FastICA and a pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-29
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.328 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION LOCALLYLINEAREMBEDDING

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnLocallyLinearEmbedding.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnLocallyLinearEmbedding.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnLocallyLinearEmbedding.xml
```

- Test Description:
 - Tests manifold with LocallyLinearEmbedding and a pivot paramater.
- Original Author:

- chenj
- Creation date:
 - 2016-02-29
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.329 FRAMEWORK POSTPROCESSORS TEMPORALDATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION MULTIDIMENSIONALSCALING

This test can be found at “./raven/tests/framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnMultiDimensionalScaling.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnMultiDimensionalScaling.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/TemporalDataMiningPostProcessor/DimensionalityReduction/test_tdmSKLearnMultiDimensionalScaling.xml
```

- Test Description:
 - Tests manifold with MDS (MultiDimensionalScaling) and a pivot parameter.
- Original Author:
 - chenj
- Creation date:
 - 2016-02-29

- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.330 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR HISTORY SAMPLING

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/test_historySetSamplingIPP.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/historySetSamplingIPP.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor/historySetSamplingIPP.xml
```

- Test Description:
 - Tests of the HistorySetSampling interfaced post-processor and all its sampling types
- Original Author:
 - mandd
- Creation date:
 - 2016-02-09
- The classes tested in this test are:
 - InterfacedPostProcessor
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2018-08-08
- description: Test the defect issue #739

2.3.331 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR HISTORYSAMPLINGINTERVALAVE

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/test_historySetSamplingIntervalAve.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/historySa
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessors
```

- Test Description:
 - Tests of the HistorySetSampling post-processor with intervalAverage interpolation technique
- Original Author:
 - junc
- Creation date:
 - 2016-11-16
- The classes tested in this test are:
 - InterfacedPostProcessor

2.3.332 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR HISTORYSETSNAPSHOT

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/test_historySetSnapshot.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/HistoryS
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessors
```

- Test Description:
 - Tests of the HistorySetSnapshot interfaced post-processor
- Original Author:
 - mandd
- Creation date:
 - 2016-02-09
- The classes tested in this test are:
 - InterfacedPostProcessor

2.3.333 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR HISTORYSETSNAPSHOTMIXED

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/test_historySetSnapshot_mixed.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/HistoryS
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessors
```

- Test Description:
 - Tests of HistorySetSnapshot and its mixed type of snapshot techniques
- Original Author:
 - talbpaul

- Creation date:
 - 2016-06-14
- The classes tested in this test are:
 - InterfacedPostProcessor

2.3.334 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR HISTORYSETSYNC

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/test_historySetSync.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/HistorySetSync
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor
```

- Test Description:
 - Tests of the HistorySetSync interfaced post-processor
- Original Author:
 - mandd
- Creation date:
 - 2016-02-09
- The classes tested in this test are:
 - InterfacedPostProcessor

2.3.335 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR HS SYNC ALL

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/test_historySetSyncAll.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/hs_sync_all
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor
```

- Test Description:
 - Tests of the HistorySetSync interfaced post-processor and in particular the all syncMethod
- Original Author:
 - talbpaul
- Creation date:
 - 2016-04-13
- The classes tested in this test are:
 - InterfacedPostProcessor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobjects

2.3.336 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR HS SYNC MIN

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/test_historySetSyncMin.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/hs_sync_r
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor
```

- Test Description:
 - Tests of the HistorySetSync interfaced post-processor and in particular the MIN syncMethod

- Original Author:
 - talbpaul
- Creation date:
 - 2016-04-14
- The classes tested in this test are:
 - InterfacedPostProcessor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobjects

2.3.337 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR HS SYNC MAX

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/HistorySetSyncMax.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/hs_sync_max
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor/hs_sync_max
```

- Test Description:
 - Tests of the HistorySetSync interfaced post-processor and in particular the MAX syncMethod
- Original Author:
 - talbpaul
- Creation date:
 - 2016-04-14
- The classes tested in this test are:

- InterfacedPostProcessor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobjects

2.3.338 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR HS2PS

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/test_HS2PS.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/HS2PS
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor
```

- Test Description:
 - Tests of the HS2PS interfaced post-processor
- Original Author:
 - mandd
- Creation date:
 - 2016-02-09
- The classes tested in this test are:
 - InterfacedPostProcessor

2.3.339 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR TYPICALHISTORYFROMHS

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/test_typicalHistoryFromHS.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor/TypicalH
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessors
```

- Test Description:
 - Tests of the TypicalHistoryFromHistorySet interfaced post-processor
- Original Author:
 - chenj
- Creation date:
 - 2016-07-07
- The classes tested in this test are:
 - InterfacedPostProcessor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-30
 - description: regolded using central binning system for empirical distributions, also formatted test to raven standard xml

2.3.340 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR.METADATAUSAGE

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/test_metadata_usage_in_interfacePP.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor.metadatausage
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessors
```

- Test Description:
 - Test of the interfaced post-processor interface internally using metadata coming from RAVEN.
- Original Author:
 - mandd
- Creation date:
 - 2019-01-16
- The classes tested in this test are:
 - Models.PostProcessors.InterfacedPostProcessor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.341 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR.HSTOPSOPERATOR

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/test_HistorySetToPointSetOperators.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor.HStoPSop
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessors
```

- Test Description:
 - This test is aimed to show how to use the “HStoPSOperator” InterfacedPostProcessor. The 3 basic functionalities are testes: 1) row-based projection, 2) pivot-value-based projection and 3) operator-based projection (max, min, average)
- Original Author:

- alfoa
- Creation date:
 - 2018-02-01
- The classes tested in this test are:
 - InterfacedPostProcessor

2.3.342 FRAMEWORK POSTPROCESSORS INTERFACEDPOSTPROCESSOR.HISTORYSETSAMPLING AND SYNC

This test can be found at “./raven/tests/framework/PostProcessors/InterfacedPostProcessor/test_historySetSampling_and_sync.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/InterfacedPostProcessor.historySetSampling_and_sync
```

or

```
./run_framework_tests --re=framework/PostProcessors/InterfacedPostProcessor.historySetSampling_and_sync
```

- Test Description:
 - Tests of the HistorySetSampling interfaced post-processor and sub-sequential synchronization of the history set
- Original Author:
 - alfoa
- Creation date:
 - 2019-10-08
- The classes tested in this test are:
 - InterfacedPostProcessor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2019-10-08
 - description: Created test to show how to perform the sync

2.3.343 FRAMEWORK POSTPROCESSORS HISTORYSETDELAY HISTORYSETDELAY

This test can be found at “./raven/tests/framework/PostProcessors/HistorySetDelay/test_historySetDelay.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/HistorySetDelay/HistorySetDelay
```

or

```
./run_framework_tests --re=framework/PostProcessors/HistorySetDelay/HistorySetDelay
```

- Test Description:
 - Tests of the HistorySetDelay interfaced post-processor by loading in a set of sine waves and delaying some of them. The output is the input, but with some parameters lagged and one speed up.
- Original Author:
 - cogljj
- Creation date:
 - 2021-04-19
- The classes tested in this test are:
 - HistorySetDelay

2.3.344 FRAMEWORK POSTPROCESSORS EXTERNALPOSTPROCESSOR.MULTIPLE USAGE

This test can be found at “./raven/tests/framework/PostProcessors/ExternalPostProcessor/multiple_usage.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ExternalPostProcessor/multiple_usage
```

or

```
./run_framework_tests --re=framework/PostProcessors/ExternalPostProcessor/multiple_usage
```

- Test Description:

- A simple example of writing an external python function and using it inside RAVEN. Here we are testing whether using the same external processor on multiple data objects does not cause naming issues.
- Original Author:
 - maljdan
- Creation date:
 - 2015-06-28
- The classes tested in this test are:
 - PostProcessors.ExternalPostProcessor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.345 FRAMEWORK POSTPROCESSORS EXTERNALPOSTPROCESSOR.HISTORY SET PARTITIONING

This test can be found at “./raven/tests/framework/PostProcessors/ExternalPostProcessor/test_history_set_partitioning.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ExternalPostProcessor.history_set
```

or

```
./run_framework_tests --re=framework/PostProcessors/ExternalPostProcessor.
```

- Test Description:
 - An example of using the External Post-Processor to partition a history set by creating a new data object that removes data where the time is less than 0.0001.
- Original Author:
 - alfoa

- Creation date:
 - 2016-09-15
- The classes tested in this test are:
 - PostProcessors.ExternalPostProcessor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-10-04
 - description: Adding an additional example that addresses Josh’s comment.
 2. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.346 FRAMEWORK POSTPROCESSORS EXTERNALPOSTPROCESSOR.HISTORY SET DELETING HISTORIES

This test can be found at “./raven/tests/framework/PostProcessors/ExternalPostProcessor/test_history_set_partitioning_and_remove_some_histories.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/ExternalPostProcessor.history_set
```

or

```
./run_framework_tests --re=framework/PostProcessors/ExternalPostProcessor.
```

- Test Description:
 - An example of using the External Post-Processor to remove some data points from a History Set. This differs from test_history_set_partitioning.xml as that test removed output points only in the time series, whereas this one will remove them from the input space.
- Original Author:
 - alfoa

- Creation date:
 - 2016-10-04
- The classes tested in this test are:
 - PostProcessors.ExternalPostProcessor
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2017-01-17
 - description: Added an additional example that addresses Josh’s comment
 2. revision info:
 - author : alfoa
 - date : 2016-10-04
 - description: Adding test descriptions for the tests related to the ExternalPostProcessor
 3. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.347 FRAMEWORK PCA GRID IMPORTANCERANKABSCOV

This test can be found at “./raven/tests/framework/PostProcessors/pca_postprocessor/test_postprocessor.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_grid/importanceRankAbsCov
```

or

```
./run_framework_tests --re=framework/pca_grid/importanceRankAbsCov
```

- Test Description:
 - Tests the ImportanceRank postprocessor based on MVN distribution with absolute covariance matrix.
- Original Author:

- wangc
- Creation date:
 - 2016-03-15
- The classes tested in this test are:
 - PostProcessors.ImportanceRank
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-13
 - description: convert test to use the new dataobjects

2.3.348 FRAMEWORK PCA GRID IMPORTANCERANKRELCOV

This test can be found at “./raven/tests/framework/PostProcessors/pca_postprocessor/test_postprocessor_rel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_grid/importanceRankRelCov
```

or

```
./run_framework_tests --re=framework/pca_grid/importanceRankRelCov
```

- Test Description:
 - Tests the ImportanceRank postprocessor based on MVN distribution with relative covariance matrix.
- Original Author:
 - wangc
- Creation date:
 - 2016-03-15
- The classes tested in this test are:
 - PostProcessors.ImportanceRank

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2017-12-13
- description: convert test to use the new dataobjects

2.3.349 FRAMEWORK PCA GRID TRANSFORMATIONMATRIX

This test can be found at “./raven/tests/framework/PostProcessors/pca_postprocessor/test_transformation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_grid/transformationMatrix
```

or

```
./run_framework_tests --re=framework/pca_grid/transformationMatrix
```

- Test Description:
 - Tests the ImportanceRank postprocessor to output transformation and inverse transformation matrices.
- Original Author:
 - wangc
- Creation date:
 - 2016-07-15
- The classes tested in this test are:
 - PostProcessors.ImportanceRank
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-13
 - description: convert test to use the new dataobjects

2.3.350 FRAMEWORK PCA GRID TIMEDEPIMPORTANCERANK

This test can be found at “./raven/tests/framework/PostProcessors/pca_postprocessor/test_time_dependent.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_grid/timeDepImportanceRank
```

or

```
./run_framework_tests --re=framework/pca_grid/timeDepImportanceRank
```

- Test Description:
 - Tests the ImportanceRank postprocessor for time-dependent problems.
- Original Author:
 - wangc
- Creation date:
 - 2016-03-15
- The classes tested in this test are:
 - PostProcessors.ImportanceRank
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-13
 - description: convert test to use the new dataobjects

2.3.351 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING KMEANS

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_dataMiningKMeans.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```


or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with the KMeans model.
- Original Author:
 - maljdan
- Creation date:
 - 2016-09-09
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.352 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING KMEANSPCA

This test can be found at “. /raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_dataMiningKMeansPCA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:

- Tests clustering with KMeans followed by data reduction with PCA.
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.353 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING MINIBATCHKMEANS

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_dataMiningMiniBatchKMeans.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with the MiniBatchKMeans model.
- Original Author:
 - senrs

- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.354 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING MEANSHIFT

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_dataMiningMeanShift.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with the MeanShift model.
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:

– DataMining

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2018-09-27
- description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.355 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING AFFINITYPROPOGATION

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_dataMiningAffinityPropogation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with the AffinityPropogation model.
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

 - author : wangc

- date : 2018-09-27
- description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.356 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING DBSCAN

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_dataMiningDBSCAN.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with the DBSCAN model.
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.357 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING SPECTRALCLUSTERING

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_dataMiningSpectralClustering.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with SpectralClustering model.
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.358 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING GAUSSIANMIXTURE

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_dataMiningGaussianMixture.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests mixtures with the GMM model.
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.
 2. revision info:
 - author : alfoa
 - date : 2019-06-25
 - description: init_param changed from wc to kmeans because the wc option has been removed in scikitlearn v. 0.21

2.3.359 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING TIME DEP CLUSTERING FILTERED

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_TD_KMeans_Filtered.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with the KMeans model and preprocessing.
- Original Author:
 - mandd
- Creation date:
 - 2016-03-30
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.360 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING VARIATIONALGMM

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_dataMiningVariationalGMM.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```


- Test Description:
 - Tests clustering with VBGMM (Variational Bayesian Gaussian Mixture Model).
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.361 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING AGGLOMERATIVE

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_dataMiningAgglomerative.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering using the Agglomerative model.
- Original Author:

- mandd
- Creation date:
 - 2016-07-20
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2017-08-07
 - description: Modifying this test case to exercise putting the data into a new data object different than the input of to the clustering algorithm

2.3.362 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING TIME DEP CLUSTERING FILTERED

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_TD_MeanShift.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with the MeanShift model and preprocessing.
- Original Author:
 - mandd
- Creation date:
 - 2016-07-20
- The classes tested in this test are:

- DataMining

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2018-09-27
- description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.363 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING TIME DEP HIERARCHICALSCIPY DTW

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_TD_hierarchical_dtw.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with Hierarchical model and DTW metric.
- Original Author:
 - mandd
- Creation date:
 - 2016-10-10
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc

- date : 2018-09-27
- description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.364 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING TIME DEP HIERARCHICALSCIPY DTW DERIVATIVE

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_TD_hierarchical_dtw_derivative.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with Hierarchical model and derivative DTW metric.
- Original Author:
 - mandd
- Creation date:
 - 2016-10-21
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.365 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING HIERARCHICALSCIPY

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_dataMiningHierarchical.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with the Hierarchical model.
- Original Author:
 - mannd
- Creation date:
 - 2016-10-10
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.366 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING AGGLOMERATIVEDTW

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_TD_agglomerative_dtw.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with Agglomerative model with DTW metric.
- Original Author:
 - mandd
- Creation date:
 - 2016-10-10
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.
 2. revision info:
 - author : wangc
 - date : 2020-05-07
 - description: Convert InterfacedPostProcessor: subType will be replaced with the text from method node, and method node will be removed

2.3.367 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING AGGLOMERATIVEEUCLIDEAN

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_TD_agglomerative_euclidean.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clusteri
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessors
```

- Test Description:
 - Tests clustering with Agglomerative model with Minkowski metric.
- Original Author:
 - mandd
- Creation date:
 - 2016-10-10
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2017-08-07
 - description: Modifying this test case to exercise putting the data into a new data object different than the input of to the clustering algorithm
 2. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.
 3. revision info:
 - author : wangc
 - date : 2020-05-07
 - description: Convert InterfacedPostProcessor: subType will be replaced with the text from method node, and method node will be removed

2.3.368 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING HIERARCHICALSCIPY SKL

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/test_dataMiningHierarchical_SKL_Pairwise.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clustering
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests clustering with the Hierarchical model with the SKL metric.
- Original Author:
 - mandd
- Creation date:
 - 2016-12-05
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.369 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR CLUSTERING.INTERACTIVE UI

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/Clustering/hierarchical_ui.xml”. This test can be called executing the following command:


```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Clusteri
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessors
```

- Test Description:
 - This test exercises the user interface coupled with the Hierarchical Clustering available in RAVEN. This test is very similar to HierarchicalScipy except this adds the ability to test the loading, running, and tear down of the UI associated to that class.
- Original Author:
 - maljdan
- Creation date:
 - 2016-05-09
- The classes tested in this test are:
 - PostProcessors.DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.370 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION EXACTPCA MLE

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningExactPCA_MLE.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/Dimension
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor
```

- Test Description:
 - Tests decomposition with PCA and MLE. This test exercises our ability to accept a string for n_components See Issue #649
- Original Author:
 - maljdan
- Creation date:
 - 2016-08-11
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.371 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION RANDOMIZEDPCA

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningRandomizedPCA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningRandomizedPCA.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningRandomizedPCA.xml
```

- Test Description:
 - Tests decomposition with RandomizedPCA.
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.372 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION KERNELPCA

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningKernelPCA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningKernelPCA.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningKernelPCA.xml
```

- Test Description:
 - Tests decomposition with KernelPCA
- Original Author:

- senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.373 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION SPARSEPCA

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningSparsePCA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningSparsePCA.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningSparsePCA.xml
```

- Test Description:
 - Tests decomposition with SparsePCA
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24

- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.374 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION MINIBATCHSPARSEPCA

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningMiniBatchSparsePCA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningMiniBatchSparsePCA.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningMiniBatchSparsePCA.xml
```

- Test Description:
 - Tests decomposition with MiniBatchSparsePCA
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2018-09-27
- description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.375 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION TRUNCATEDSVD

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningTruncatedSVD.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningTruncatedSVD.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningTruncatedSVD.xml
```

- Test Description:
 - Test decomposition using the TruncatedSVD model.
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.376 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION FASTICA

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningFastICA.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningFastICA.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningFastICA.xml
```

- Test Description:
 - Tests decomposition using FastICA.
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.377 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION ISOMAP

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningIsomap.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningLocallyLinearEmbedding.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningLocallyLinearEmbedding.xml
```

- Test Description:
 - Testing manifold with Isomap.
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.378 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION LOCALLYLINEAREMBEDDING

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningLocallyLinearEmbedding.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningLocallyLinearEmbedding.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningLocallyLinearEmbedding.xml
```


- Test Description:
 - Tests manifold with LocallyLinearEmbedding.
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.379 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION SPECTRALEMMBEDDING

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningSpectralEmbedding.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningSpectralEmbedding.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningSpectralEmbedding.xml
```

- Test Description:
 - Tests manifold with SpectralEmbedding.
- Original Author:

- senrs
- Creation date:
 - 2015-11-24
- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.380 FRAMEWORK POSTPROCESSORS DATAMININGPOSTPROCESSOR DIMENSIONALITYREDUCTION MULTIDIMENSIONALSCALING

This test can be found at “./raven/tests/framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningMultiDimensionalScaling.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningMultiDimensionalScaling.xml
```

or

```
./run_framework_tests --re=framework/PostProcessors/DataMiningPostProcessor/DimensionalityReduction/test_dataMiningMultiDimensionalScaling.xml
```

- Test Description:
 - Tests manifold with MDS
- Original Author:
 - senrs
- Creation date:
 - 2015-11-24

- The classes tested in this test are:
 - DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.381 FRAMEWORK POSTPROCESSORS TSACHARACTERIZER.BASIC

This test can be found at “./raven/tests/framework/PostProcessors/TSCharacterize/basic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/TSCharacterizer.Basic
```

or

```
./run_framework_tests --re=framework/PostProcessors/TSCharacterizer.Basic
```

- Test Description:
 - Test basic operation of the TSCharacterizer. Each characterization target should have a test signal designed for it to assure an analytic or reliable result.
- Original Author:
 - talbpaul
- Creation date:
 - 2021-08-04
- The classes tested in this test are:
 - PostProcessors.TSCharacterizer

2.3.382 FRAMEWORK POSTPROCESSORS VALIDATION TEST VALIDATION GATE PROBABILISTIC

This test can be found at “./raven/tests/framework/PostProcessors/Validation/test_validation_gate_probabilistic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Validation/test_validation_gate_p
```

or

```
./run_framework_tests --re=framework/PostProcessors/Validation/test_valida
```

- Test Description:
 - This test is aimed to show how to use the mechanics of the Validation Post-Processor. For simplicity, this test is using the attenuation model (analytical) and simple Probabilistic Validation metrics. The output name convention is “feature name”_“target name”_“metric name”.
- Original Author:
 - alfoa
- Creation date:
 - 2021-04-10
- The classes tested in this test are:
 - PostProcessors.Validation
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2021-04-11
 - description: Added Modification for new PP API

2.3.383 FRAMEWORK POSTPROCESSORS VALIDATION.TEST VALIDATION GATE PROBABILISTIC TIME DEP

This test can be found at “./raven/tests/framework/PostProcessors/Validation/test_validation_gate_probabilistic_time_dep.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/PostProcessors/Validation.test_validation_gate_p
```

or

```
./run_framework_tests --re=framework/PostProcessors/Validation.test_valida
```

- Test Description:
 - This test is aimed to show how to use the mechanics of the Validation Post-Processor for time dependent data. For simplicity, this test is using precomputed data (sin functions) and the simple Probabilistic Validation metrics. The output name convention is “feature name”_“target name”_“metric name”.
- Original Author:
 - alfoa
- Creation date:
 - 2021-05-10
- The classes tested in this test are:
 - PostProcessors.Validation
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2021-05-11
 - description: Added Time dependent capability

2.3.384 FRAMEWORK.TEST TRYCATCH

This test can be found at “./raven/tests/framework/TestedScripts/test_trycatch.py”. This test can be called executing the following command:

```
./run_tests --re=framework.test_trycatch
```

or

```
./run_framework_tests --re=framework.test_trycatch
```

- Test Description:
 - This test is aimed to perform Unit test on the MessageHandler It can not be considered as active part of the code but of the regression test system
- Original Author:
 - talbpaul
- Creation date:
 - 2016-02-26
- The classes tested in this test are:
 - MessageHandler

2.3.385 FRAMEWORK USER GUIDE DATAMINING DATAMININGANALYSIS

This test can be found at “./raven/tests/framework/user_guide/DataMining/dataMiningAnalysis.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/DataMining/dataMiningAnalysis
```

or

```
./run_framework_tests --re=framework/user_guide/DataMining/dataMiningAnaly
```

- Test Description:
 - This test is an example for the user guide to draw from. It demonstrates a typical workflow for sampling then making use of the DataMining postprocessor.
- Original Author:
 - talbpw

- Creation date:
 - 2017-01-30
- The classes tested in this test are:
 - PostProcessor.DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : burlip
 - date : 2019-04-17
 - description: modified file to replace the Analyticalbateman example with the projectile example

2.3.386 FRAMEWORK USER GUIDE RAVENTUTORIAL SINGLERUN

This test can be found at “./raven/tests/framework/user_guide/ravenTutorial/singleRun.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/ravenTutorial/singleRun
```

or

```
./run_framework_tests --re=framework/user_guide/ravenTutorial/singleRun
```

- Test Description:
 - This test is an example for the user guide to draw from. It demonstrates typical usage of SingleRun.
- Original Author:
 - wangc
- Creation date:
 - 2017-07-24
- The classes tested in this test are:
 - Models.Code

2.3.387 FRAMEWORK USER GUIDE SINGLERUNPLOT

This test can be found at “./raven/tests/framework/user_guide/ravenTutorial/singleRunPlotAndPrint.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/singleRunPlot
```

or

```
./run_framework_tests --re=framework/user_guide/singleRunPlot
```

- Test Description:
 - This test is an example for the user guide to draw from. It demonstrates a streamlined workflow of using the SingleRun step to take a single sample, then plot and print the results.
- Original Author:
 - wangc
- Creation date:
 - 2017-07-28
- The classes tested in this test are:
 - Steps.SingleRun

2.3.388 FRAMEWORK USER GUIDE SINGLERUNSUBPLOT

This test can be found at “./raven/tests/framework/user_guide/ravenTutorial/singleRunSubPlotsAndSelectivePrint.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/singleRunSubPlot
```

or

```
./run_framework_tests --re=framework/user_guide/singleRunSubPlot
```

- Test Description:

- This test is an example for the user guide to draw from. This advances the simplest SingleRun example by selectively printing and plotting only parts of the data.
- Original Author:
 - wangc
- Creation date:
 - 2017-07-28
- The classes tested in this test are:
 - Steps.SingleRun,OutStreams.Print

2.3.389 FRAMEWORK USER GUIDE RAVENTUTORIAL MONTECARLO

This test can be found at “./raven/tests/framework/user_guide/ravenTutorial/MonteCarlo.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/ravenTutorial/MonteCarlo
```

or

```
./run_framework_tests --re=framework/user_guide/ravenTutorial/MonteCarlo
```

- Test Description:
 - This test is an example for the user guide to draw from. It demonstrates typical usage of the MultiRun with Monte Carlo sampler.
- Original Author:
 - wangc
- Creation date:
 - 2017-07-24
- The classes tested in this test are:
 - Samplers.MonteCarlo

2.3.390 FRAMEWORK USER GUIDE RAVENTUTORIAL ROMTRAIN

This test can be found at “./raven/tests/framework/user_guide/ravenTutorial/RomTrain.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/ravenTutorial/RomTrain
```

or

```
./run_framework_tests --re=framework/user_guide/ravenTutorial/RomTrain
```

- Test Description:
 - This test is an example for the user guide to draw from. It demonstrates the workflow for obtaining samples, then constructing the ROM and dumping the ROM .
- Original Author:
 - wangc
- Creation date:
 - 2017-07-26
- The classes tested in this test are:
 - Models.ROM

2.3.391 FRAMEWORK USER GUIDE RAVENTUTORIAL ROMLOAD

This test can be found at “./raven/tests/framework/user_guide/ravenTutorial/RomLoad.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/ravenTutorial/RomLoad
```

or

```
./run_framework_tests --re=framework/user_guide/ravenTutorial/RomLoad
```

- Test Description:
 - This test is an example for the user guide to draw from. It demonstrates the workflow for loading and sampling ROM.

- Original Author:
 - wangc
- Creation date:
 - 2017-07-26
- The classes tested in this test are:
 - Models.ROM

2.3.392 FRAMEWORK USER GUIDE RAVENTUTORIAL POSTPROCESS

This test can be found at “./raven/tests/framework/user_guide/ravenTutorial/PostProcess.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/ravenTutorial/PostProcess
```

or

```
./run_framework_tests --re=framework/user_guide/ravenTutorial/PostProcess
```

- Test Description:
 - This test is an example for the user guide to draw from. It performs basic statistics on data taken from the analytic bateman model, and demonstrates a typical workflow for using the PostProcess step.
- Original Author:
 - wangc
- Creation date:
 - 2017-07-27
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc

- date : 2018-12-18
- description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.393 FRAMEWORK USER GUIDE REDUCEDORDERMODELLING ROMCONSTRUCTION

This test can be found at “./raven/tests/framework/user_guide/ReducedOrderModeling/reducedOrderModeling.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/ReducedOrderModelling/ROMConstruction
```

or

```
./run_framework_tests --re=framework/user_guide/ReducedOrderModelling/ROMC
```

- Test Description:
 - This test is an example for the user guide to draw from. It demonstrates the workflow for obtaining samples, then constructing both ScitKitLearn and NDinvDistWeight reduced-order models.
- Original Author:
 - talbpw
- Creation date:
 - 2017-01-27
- The classes tested in this test are:
 - Models.ROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : burlip
 - date : 2019-04-18
 - description: modified file to replaced the Analyticalbateman example with the projectile example

2.3.394 FRAMEWORK USER GUIDE SIMPLE

This test can be found at “./raven/tests/framework/user_guide/EnsembleModel/basic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/Simple
```

or

```
./run_framework_tests --re=framework/user_guide/Simple
```

- Test Description:
 - Provides a user case of a simple ensemble model.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-02-07
- The classes tested in this test are:
 - Models.EnsembleModel

2.3.395 FRAMEWORK USER GUIDE STATISTICALANALYSIS STATISTICALANALYSIS

This test can be found at “./raven/tests/framework/user_guide/StatisticalAnalysis/statisticalAnalysis.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/StatisticalAnalysis/StatisticalAnaly
```

or

```
./run_framework_tests --re=framework/user_guide/StatisticalAnalysis/Statist
```

- Test Description:
 - This test is an example for the user guide to draw from. It performs basic statistics on data taken from the analytic bateman model, and demonstrates a typical workflow for using the basic statistics postprocessor.

- Original Author:
 - talbpw
- Creation date:
 - 2017-01-27
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-20
 - description: convert test to use the new DataObjects with the new structure of basic statistic
 2. revision info:
 - author : burlip
 - date : 2019-04-18
 - description: modified file to replaced the Analyticalbateman example with the projectile example

2.3.396 FRAMEWORK USER GUIDE ADAPTIVESAMPLINGSTRATEGIES LIMITSURFACESEARCH

This test can be found at “./raven/tests/framework/user_guide/AdaptiveSamplingStrategies/adaptiveSamplingLSsearch.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/AdaptiveSamplingStrategies/limitSurf
```

or

```
./run_framework_tests --re=framework/user_guide/AdaptiveSamplingStrategies
```

- Test Description:
 - This test is an example for the user guide to draw from. It demonstrates a typical workflow for using the LimitSurface capabilities of RAVEN (both the LimitSurfaceSearch sampler and the LimitSurfaceIntegral postprocessor).

- Original Author:
 - talbpw
- Creation date:
 - 2017-01-26
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch,PostProcessors.LimitSurfaceIntegral
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.397 FRAMEWORK USER GUIDE SIMPLE

This test can be found at “./raven/tests/framework/user_guide/optimizing/simple.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/Simple
```

or

```
./run_framework_tests --re=framework/user_guide/Simple
```

- Test Description:
 - Provides a user case of the simplest optimization input.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-06-30
- The classes tested in this test are:
 - Optimizer

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : talbpaul
- date : 2020-08-21
- description: Optimizer rework compatability

2.3.398 FRAMEWORK USER GUIDE MULTILEVEL

This test can be found at “./raven/tests/framework/user_guide/optimizing/multiple_trajectories.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/Multilevel
```

or

```
./run_framework_tests --re=framework/user_guide/Multilevel
```

- Test Description:
 - Provides a user case of multiple-trajectory optimization in action for the user guide.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-06-30
- The classes tested in this test are:
 - Optimizer
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2020-08-21
 - description: Optimizer rework compatability

2.3.399 FRAMEWORK USER GUIDE STEPSIZE

This test can be found at “./raven/tests/framework/user_guide/optimizing/step_size.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/StepSize
```

or

```
./run_framework_tests --re=framework/user_guide/StepSize
```

- Test Description:
 - Provides a user case of providing growth and shrink multiplication factors for gradient search.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-06-30
- The classes tested in this test are:
 - Optimizer
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2020-08-21
 - description: Optimizer rework compatability

2.3.400 FRAMEWORK USER GUIDE.CONSTRAIN

This test can be found at “./raven/tests/framework/user_guide/optimizing/constrain.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide.Constrain
```

or

```
./run_framework_tests --re=framework/user_guide.Constrain
```

- Test Description:
 - Provides a user case of the "constraints" function in action for the user guide.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-06-30
- The classes tested in this test are:
 - Optimizer
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2020-08-21
 - description: Optimizer rework compatability
 2. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.401 FRAMEWORK USER GUIDE FORWARDSAMPLINGSTRATEGIES MONTE-CARLO

This test can be found at “./raven/tests/framework/user_guide/ForwardSamplingStrategie/forwardSamplingMontecarlo.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/ForwardSamplingStrategies/MonteCarlo
```

or

```
./run_framework_tests --re=framework/user_guide/ForwardSamplingStrategies/
```

- Test Description:
 - This test is an example for the user guide to draw from. It demonstrates typical usage of the MonteCarlo sampler to sample a Code model.
- Original Author:
 - talbpw
- Creation date:
 - 2017-01-26
- The classes tested in this test are:
 - Samplers.MonteCarlo
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : burlip
 - date : 2019-05-01
 - description: modified file to replace the Analyticalbateman example with the projectile example

2.3.402 FRAMEWORK USER GUIDE FORWARDSAMPLINGSTRATEGIES GRID

This test can be found at “./raven/tests/framework/user_guide/ForwardSamplingStrategies/forwardSamplingGrid.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/ForwardSamplingStrategies/Grid
```

or

```
./run_framework_tests --re=framework/user_guide/ForwardSamplingStrategies/
```

- Test Description:
 - This test is an example for the user guide to draw from. It demonstrates typical usage of the Grid sampler to sample a Code model.
- Original Author:
 - talbpw

- Creation date:
 - 2017-01-26
- The classes tested in this test are:
 - Samplers.Grid
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : burlip
 - date : 2019-05-08
 - description: modified file to replace the Analyticalbateman example with the projectile example

2.3.403 FRAMEWORK USER GUIDE FORWARDSAMPLINGSTRATEGIES STRATIFIED

This test can be found at “./raven/tests/framework/user_guide/ForwardSamplingStrategies/forwardSamplingStratified.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/ForwardSamplingStrategies/Stratified
```

or

```
./run_framework_tests --re=framework/user_guide/ForwardSamplingStrategies/
```

- Test Description:
 - This test is an example for the user guide to draw from. It exemplifies using the Stratified sampler on a Code model (the Analytic Bateman in this case).
- Original Author:
 - talbpw
- Creation date:
 - 2017-01-26
- The classes tested in this test are:

- Samplers.Stratified
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : burlip
 - date : 2019-05-08
 - description: modified file to replace the Analyticalbateman example with the projectile example

2.3.404 FRAMEWORK USER GUIDE FORWARDSAMPLINGSTRATEGIES SPARSEGRID

This test can be found at “./raven/tests/framework/user_guide/ForwardSamplingStrategies/forwardSamplingSparseGrid.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/user_guide/ForwardSamplingStrategies/SparseGrid
```

or

```
./run_framework_tests --re=framework/user_guide/ForwardSamplingStrategies/
```

- Test Description:
 - This test is an example for the user guide to draw from. It typifies a workflow for using the SparseGrid sampler, and constructing a corresponding ROM.
- Original Author:
 - talbpw
- Creation date:
 - 2017-01-26
- The classes tested in this test are:
 - Samplers.SparseGrid
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : burlip

- date : 2019-05-08
- description: modified file to replace the Analyticalbateman example with the projectile example

2.3.405 FRAMEWORK SINGLERUNS CODEMODEL

This test can be found at “./raven/tests/framework/SingleRuns/withCode.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/SingleRuns/codeModel
```

or

```
./run_framework_tests --re=framework/SingleRuns/codeModel
```

- Test Description:
 - This test assures the SingleRun works in conjunction with the Code model.
- Original Author:
 - talbpw
- Creation date:
 - 2017-02-02
- The classes tested in this test are:
 - Steps.SingleRun,Model.Code

2.3.406 FRAMEWORK SINGLERUNS EXTERNALMODELFAILS

This test can be found at “./raven/tests/framework/SingleRuns/withExternalModel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/SingleRuns/externalModelFails
```

or

```
./run_framework_tests --re=framework/SingleRuns/externalModelFails
```

- Test Description:
 - This test assures the SingleRun produces the correct error when paired with the External model.
- Original Author:
 - talbpw
- Creation date:
 - 2017-01-27
- The classes tested in this test are:
 - Steps.SingleRun,Model.ExternalModel

2.3.407 FRAMEWORK SINGLERUNS ROMFAILS

This test can be found at “./raven/tests/framework/SingleRuns/withROM.xml”.
 This test can be called executing the following command:

```
./run_tests --re=framework/SingleRuns/ROMFails
```

or

```
./run_framework_tests --re=framework/SingleRuns/ROMFails
```

- Test Description:
 - This test assures the SingleRun produces the correct error when paired with the ROM model.
- Original Author:
 - talbpw
- Creation date:
 - 2017-01-27
- The classes tested in this test are:
 - Steps.SingleRun,Model.ROM

2.3.408 FRAMEWORK SINGLERUNS POSTPROCESSORFAILS

This test can be found at “./raven/tests/framework/SingleRuns/withPP.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/SingleRuns/postProcessorFails
```

or

```
./run_framework_tests --re=framework/SingleRuns/postProcessorFails
```

- Test Description:
 - This test assures the SingleRun produces the correct error when paired with the Post-Processor model.
- Original Author:
 - talbpw
- Creation date:
 - 2017-01-27
- The classes tested in this test are:
 - Steps.SingleRun,Model.PostProcessor

2.3.409 FRAMEWORK SINGLERUNS DUMMYFAILS

This test can be found at “./raven/tests/framework/SingleRuns/withDummy.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/SingleRuns/dummyFails
```

or

```
./run_framework_tests --re=framework/SingleRuns/dummyFails
```

- Test Description:
 - This test assures the SingleRun produces the correct error when paired with the Dummy model.

- Original Author:
 - talbpw
- Creation date:
 - 2017-01-27
- The classes tested in this test are:
 - Steps.SingleRun,Model.Dummy

2.3.410 FRAMEWORK OPTIMIZERS SIMULATEDANNEALING.FUNCTIONALLYCONSTRAINEDS

This test can be found at “./raven/tests/framework/Optimizers/SimulatedAnnealing/FunctionallyConstrainedSA/test_funcConstrSimulatedAnnealing.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/SimulatedAnnealing.FunctionallyConstr
```

or

```
./run_framework_tests --re=framework/Optimizers/SimulatedAnnealing.Function
```

- Test Description:
 - This test uses a multidimensional linear function such that the trajectory must pass through a functional constraint to reach the optimal point. The test is designed by @talbpaul and is applied to simulated annealing.
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-02-05
- The classes tested in this test are:
 - Optimizer

2.3.411 FRAMEWORK OPTIMIZERS GENETICALGORITHMS.MINWREPLACEMENTCONVAHD

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/testGAMinwRepConvAHDpUsingCode.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GeneticAlgorithms.MinwReplacementConvAHDpUsingCode.xml
```

or

```
./run_framework_tests --re=framework/Optimizers/GeneticAlgorithms.MinwReplacementConvAHDpUsingCode.xml
```

- Test Description:
 - This test assesses the Genetic algorithm can be used employing Models.Code for the objective function evaluation. This test is mechanical test of the GA and Code (Models) functionality.
- Original Author:
 - alfoa
- Creation date:
 - 2021-09-07
- The classes tested in this test are:
 - Optimizers.GeneticAlgorithm, Models.Code

2.3.412 FRAMEWORK OPTIMIZERS GENETICALGORITHMS GA DISCRETEINTWITH-REPLACEMENT

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/GA_discreteIntWithReplacement.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GeneticAlgorithms/GA_discreteIntWithReplacement.xml
```

or

```
./run_framework_tests --re=framework/Optimizers/GeneticAlgorithms/GA_discreteIntWithReplacement.xml
```

- Test Description:
 - This test is designed to find the optimal solution of a multiple knapsack problem The optimal solution should reach a maximum value of: planValue=20
- Original Author:
 - mandd
- Creation date:
 - 2020-06-24
- The classes tested in this test are:
 - GeneticAlgorithm

2.3.413 FRAMEWORK OPTIMIZERS GENETICALGORITHMS GA KNAPSACKBASE

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/GA_knapsackBase.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GeneticAlgorithms/GA_knapsackBase
```

or

```
./run_framework_tests --re=framework/Optimizers/GeneticAlgorithms/GA_knapsackBase
```

- Test Description:
 - This test is designed to find the optimal solution of a basic knapsack problem
- Original Author:
 - mandd
- Creation date:
 - 2020-12-02
- The classes tested in this test are:
 - GeneticAlgorithm

2.3.414 FRAMEWORK OPTIMIZERS GENETICALGORITHMS GA KNAPSACKBASE-TOURNAMENT

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/GA_knapsackBaseTournament.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GeneticAlgorithms/GA_knapsackBaseTou
```

or

```
./run_framework_tests --re=framework/Optimizers/GeneticAlgorithms/GA_knaps
```

- Test Description:
 - This test is designed to find the optimal solution of a basic knapsack problem using tournament select
- Original Author:
 - mandd
- Creation date:
 - 2021-06-22
- The classes tested in this test are:
 - GeneticAlgorithm

2.3.415 FRAMEWORK OPTIMIZERS GENETICALGORITHMS GA KNAPSACKBASE-UNIFXOVER

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/GA_knapsackBaseUnifXover.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GeneticAlgorithms/GA_knapsackBaseUni
```

or

```
./run_framework_tests --re=framework/Optimizers/GeneticAlgorithms/GA_knaps
```

- Test Description:
 - This test is designed to find the optimal solution of a basic knapsack problem
- Original Author:
 - mandd
- Creation date:
 - 2020-12-02
- The classes tested in this test are:
 - GeneticAlgorithm

2.3.416 FRAMEWORK OPTIMIZERS GENETICALGORITHMS KNAPSACKMULTI- PLEDIST

This test can be found at “./raven/tests/framework/Optimizers/GeneticAlgorithms/discrete/unconstrained/GA_knapsackBase_multipleDist.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Optimizers/GeneticAlgorithms/knapsackMultipleDist
```

or

```
./run_framework_tests --re=framework/Optimizers/GeneticAlgorithms/knapsackMultipleDist
```

- Test Description:
 - This test is designed to find the optimal solution of a heterogenous knapsack problem. This test is design to handle multiple distributions
- Original Author:
 - mandd
- Creation date:
 - 2021-07-14
- The classes tested in this test are:
 - GeneticAlgorithm

2.3.417 FRAMEWORK PCA GRID GRIDPCAVALUE

This test can be found at “./raven/tests/framework/pca_grid/test_grid_pca_value.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_grid/gridPCAValue
```

or

```
./run_framework_tests --re=framework/pca_grid/gridPCAValue
```

- Test Description:
 - Tests the value-generated Grid sampler combined with input reductions via PCA method, using multivariate normal distributions.
- Original Author:
 - wangc
- Creation date:
 - 2015-10-28
- The classes tested in this test are:
 - Samplers.Grid

2.3.418 FRAMEWORK PCA GRID GRIDPCACDF

This test can be found at “./raven/tests/framework/pca_grid/test_grid_pca_cdf.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_grid/gridPCACdf
```

or

```
./run_framework_tests --re=framework/pca_grid/gridPCACdf
```

- Test Description:
 - Tests the CDF-generated Grid sampler combined with input reductions via PCA method, using multivariate normal distributions.

- Original Author:
 - wangc
- Creation date:
 - 2015-10-28
- The classes tested in this test are:
 - Samplers.Grid

2.3.419 FRAMEWORK PCA GRID MCPCA

This test can be found at “./raven/tests/framework/pca_grid/test_mc_pca.xml”.
This test can be called executing the following command:

```
./run_tests --re=framework/pca_grid/mcPCA
```

or

```
./run_framework_tests --re=framework/pca_grid/mcPCA
```

- Test Description:
 - Tests the MonteCarlo sampler combined with input reductions via PCA method, using multivariate normal distributions.
- Original Author:
 - wangc
- Creation date:
 - 2015-10-28
- The classes tested in this test are:
 - Samplers.MonteCarlo

2.3.420 FRAMEWORK PCA ROM INPUTPCAREDUCTION

This test can be found at “./raven/tests/framework/pca_rom/test_input_pca.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_rom/inputPCAReduction
```

or

```
./run_framework_tests --re=framework/pca_rom/inputPCAReduction
```

- Test Description:
 - Tests capability of PCA input reduction.
- Original Author:
 - wangc
- Creation date:
 - 2015-09-14
- The classes tested in this test are:
 - Distributions.MultivariateNormal

2.3.421 FRAMEWORK PCA ROM MVNABS

This test can be found at “./raven/tests/framework/pca_rom/test_MVN_abs.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_rom/MVNabs
```

or

```
./run_framework_tests --re=framework/pca_rom/MVNabs
```

- Test Description:
 - Tests MVN with absolute covariance matrix
- Original Author:

- wangc
- Creation date:
 - 2015-09-14
- The classes tested in this test are:
 - Distributions.MultivariateNormal

2.3.422 FRAMEWORK PCA ROM MVNREL

This test can be found at “./raven/tests/framework/pca_rom/test_MVN_rel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_rom/MVNRel
```

or

```
./run_framework_tests --re=framework/pca_rom/MVNRel
```

- Test Description:
 - Tests MVN with relative covariance matrix
- Original Author:
 - wangc
- Creation date:
 - 2015-09-14
- The classes tested in this test are:
 - Distributions.MultivariateNormal

2.3.423 FRAMEWORK PCA ROM.ROM

This test can be found at “./raven/tests/framework/pca_rom/test_rom.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_rom.ROM
```

or

```
./run_framework_tests --re=framework/pca_rom.ROM
```

- Test Description:
 - Tests a high-input-dimensionality case to demonstrate input reduction.
- Original Author:
 - wangc
- Creation date:
 - 2015-09-14
- The classes tested in this test are:
 - Distributions.MultivariateNormal

2.3.424 FRAMEWORK PCA ROM ONEDIM

This test can be found at “./raven/tests/framework/pca_rom/test_one_dim_pca.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_rom/oneDim
```

or

```
./run_framework_tests --re=framework/pca_rom/oneDim
```

- Test Description:
 - Tests fix for Issue #389 where the code errored when the problem is reduced to 1 dimension.
- Original Author:
 - wangc
- Creation date:
 - 2015-09-14
- The classes tested in this test are:
 - Distributions.MultivariateNormal

2.3.425 FRAMEWORK OUTSTREAMS.IMAGE GENERATION TEXT

This test can be found at “./raven/tests/framework/OutStreams/imageGeneration_ps.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/OutStreams.image_generation_text
```

or

```
./run_framework_tests --re=framework/OutStreams.image_generation_text
```

- Test Description:
 - Test to check the functionalities of OutStreams system in RAVEN of type Plot. This test is aimed to check the capability of RAVEN to create a scatter Plot in PostScript format.
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-27
- The classes tested in this test are:
 - OutStreams.Plot
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 2. revision info:
 - author : alfoa
 - date : 2016-10-20
 - description: Modified XSD and removed dim attribute from all the tests
 3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.426 FRAMEWORK.IMAGE GENERATION RAW

This test can be found at “./raven/tests/framework/OutStreams/testImageGeneration.py”. This test can be called executing the following command:

```
./run_tests --re=framework.image_generation_raw
```

or

```
./run_framework_tests --re=framework.image_generation_raw
```

- Test Description:
 - This test the online generation of plots (colorbar plot). It can not be considered part of the active code but of the regression test system.
This test will use ImageMagick’s ”compare” utility in order to determine if two image files are within some amount of tolerance. This script operates by executing raven on the input file and then using compare to determine if the gold file and the generated file are near identical. If they are near enough to identical this test will report a ”pass,” otherwise it will return a ”fail.”
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-27
- The classes tested in this test are:
 -
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-05-04
 - description: Fixing the test for the compare executable to test the gold image against itself, if this returns a non-zero code, then the version of imageMagick cannot be used to get a valid difference. Also, I am removing the difference image and instead doing null: to remove the output file when using compare.
 2. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.3.427 FRAMEWORK OUTSTREAMS.INTERACTIVE PLOTTING

This test can be found at “./raven/tests/framework/OutStreams/interactivePlot.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/OutStreams.interactive_plotting
```

or

```
./run_framework_tests --re=framework/OutStreams.interactive_plotting
```

- Test Description:
 - Test to check the functionalities of OutStreams system in RAVEN of type Plot. This test is aimed to check the capability of RAVEN to create a Plot and visualize it on the screen (interactively)
- Original Author:
 - maljdan
- Creation date:
 - 2016-06-30
- The classes tested in this test are:
 - OutStreams.Plot
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-09-01
 - description: Close #650
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15

- description: Test updates
3. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.428 FRAMEWORK OUTSTREAMS.INVALIDINTERPOLATION

This test can be found at “./raven/tests/framework/OutStreams/invalidInterpolation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/OutStreams.invalidInterpolation
```

or

```
./run_framework_tests --re=framework/OutStreams.invalidInterpolation
```

- Test Description:
 - This test was added to detect a defect in the plotting of something like a contour/surface/pcolor/wireframe where it is not well-defined when a single point is used. See #832
- Original Author:
 - maljdan
- Creation date:
 - 2017-03-22
- The classes tested in this test are:
 - OutStreams.Plot
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-01-02
 - description: Added input data object to prevent same-input-as-output error

2.3.429 FRAMEWORK OUTSTREAMS.TEST SUBPLOT

This test can be found at “./raven/tests/framework/OutStreams/test_subPlot.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/OutStreams.test_subPlot
```

or

```
./run_framework_tests --re=framework/OutStreams.test_subPlot
```

- Test Description:
 - Test to check the functionalities of OutStreams system in RAVEN to Plot out the information contained in DataObjects, determining in a sub plotting layout (multiple plots side by side in the same figure)
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-26
- The classes tested in this test are:
 - OutStreams.Plot
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History.
 2. revision info:
 - author : alfoa
 - date : 2016-09-01
 - description: Close #650
 3. revision info:
 - author : alfoa
 - date : 2016-10-20

- description: Modified XSD and removed dim attribute from all the tests

4. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.3.430 FRAMEWORK OUTSTREAMS.IO ROM PICKLE

This test can be found at “./raven/tests/framework/OutStreams/test_io_ROM_pickle.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/OutStreams.io_ROM_pickle
```

or

```
./run_framework_tests --re=framework/OutStreams.io_ROM_pickle
```

- Test Description:
 - Test to check the functionalities of OutStreams system in RAVEN to Print out the information contained in DataObjects. In addition, it checks the capability of RAVEN to construct a ROM from a pickle file.
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-26
- The classes tested in this test are:
 - Models.ROM, DataObjects.PointSet, DataObjects.HistorySet, OutStreams.Print
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.431 FRAMEWORK OUTSTREAMS.LEGEND

This test can be found at “./raven/tests/framework/OutStreams/test_legend.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/OutStreams.legend
```

or

```
./run_framework_tests --re=framework/OutStreams.legend
```

- Test Description:
 - Test to check the functionalities of OutStreams system in RAVEN of type Plot, when a legend is added.
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-27
- The classes tested in this test are:
 - OutStreams.Plot
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-05-04
 - description: Fixing the test for the compare executable to test the gold image against itself, if this returns a non-zero code, then the version of imageMagick cannot be used to get a valid difference. Also, I am removing the difference image and instead doing null: to remove the output file when using compare.
 2. revision info:
 - author : chenj
 - date : 2016-07-07
 - description: edit docstring
 3. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.432 FRAMEWORK OUTSTREAMS.LINE

This test can be found at “./raven/tests/framework/OutStreams/line_plot.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/OutStreams.line
```

or

```
./run_framework_tests --re=framework/OutStreams.line
```

- Test Description:
 - Test to check the functionalities of OutStreams system in RAVEN of line Plot, when HistorySet is used. Fix issue #722
- Original Author:
 - wangc
- Creation date:
 - 2018-08-02
- The classes tested in this test are:
 - OutStreams.Plot
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2020-04-07
 - description: Modified test to be consistent with newer projectile model

2.3.433 FRAMEWORK OUTSTREAMS.MULTIPLESCATTEREDDATA

This test can be found at “./raven/tests/framework/OutStreams/plot/multipleScatter.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/OutStreams.MultipleScatteredData
```

or

```
./run_framework_tests --re=framework/OutStreams.MultipleScatteredData
```

- Test Description:
 - This test assesses the ability of the outstreams to plot two different scatter plots on the same 3D axes
- Original Author:
 - MohammadAbdo
- Creation date:
 - 2020-04-07
- The classes tested in this test are:
 - OutStreams

2.3.434 FRAMEWORK OUTSTREAMS.SAMPLEPLOT

This test can be found at “./raven/tests/framework/OutStreams/sample_plot.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/OutStreams.SamplePlot
```

or

```
./run_framework_tests --re=framework/OutStreams.SamplePlot
```

- Test Description:
 - Tests use of the SamplePlot plotter. Samples data, then plots the samples using the SamplePlot plotter.
- Original Author:
 - talbpaul
- Creation date:
 - 2021-04-01
- The classes tested in this test are:
 - OutStreams.SamplePlot

2.3.435 FRAMEWORK SAMPLERS ROM TIMEDEPROM

This test can be found at “./raven/tests/framework/ROM/test_t_rom.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/timeDepRom
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/timeDepRom
```

- Test Description:
 - This tests using a general time-dependent reduced-order model.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-11-30
- The classes tested in this test are:
 - Models.ROM

2.3.436 FRAMEWORK SAMPLERS ROM TIMEDEPGUASSPOLY

This test can be found at “./raven/tests/framework/ROM/test_time_dep_scgpc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/timeDepGuassPoly
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/timeDepGuassPoly
```

- Test Description:
 - This tests using a time-dependent GaussPolynomialROM.
- Original Author:

- talbpaul
- Creation date:
 - 2016-03-09
- The classes tested in this test are:
 - SupervisedLearning.GaussPolynomialROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-files to ROM-dataobjects
 2. revision info:
 - author : wangc
 - date : 2018-08-09
 - description: Add pivotParameter for time dependent ROM

2.3.437 FRAMEWORK.ROM.SKL TIME

This test can be found at “./raven/tests/framework/ROM/skl_timedep.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.ROM.SKL_time
```

or

```
./run_framework_tests --re=framework.ROM.SKL_time
```

- Test Description:
 - Tests the construction and sampling of time-dependent ScitKitLearn ROMs. In particular, tests that if one target (time) has all the same values, but not others, right action is still taken.
- Original Author:
 - talbpaul
- Creation date:

– 2018-01-25

- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn

2.3.438 FRAMEWORK ROM TIMESERIES POLYEXPONENTIAL.POLYEXPNEAREST

This test can be found at “./raven/tests/framework/ROM/TimeSeries/PolyExponential/test_poly_exponential_nearest.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/PolyExponential.PolyExpNearest
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/PolyExponential.PolyExp
```

- Test Description:
 - This test is aimed to check the mechanics of the PolyExponential ROM using, for the coefficient regression, the nearest algorithm regression
- Original Author:
 - alfoa
- Creation date:
 - 2018-04-25
- The classes tested in this test are:
 - SupervisedLearning.PolyExponential
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject
 2. revision info:
 - author : alfoa
 - date : 2018-04-25
 - description: Adding this test description.

2.3.439 FRAMEWORK ROM TIMESERIES POLYEXPONENTIAL.POLYEXPPOLY

This test can be found at “./raven/tests/framework/ROM/TimeSeries/PolyExponential/test_poly_exponential_poly.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/PolyExponential.PolyExpPoly
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/PolyExponential.PolyExpPoly
```

- Test Description:
 - This test is aimed to check the mechanics of the PolyExponential ROM using, for the coefficient regression, the polynomial regression (2nd order in this case)
- Original Author:
 - alfoa
- Creation date:
 - 2018-04-25
- The classes tested in this test are:
 - SupervisedLearning.PolyExponential
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject
 2. revision info:
 - author : alfoa
 - date : 2018-04-25
 - description: Adding this test description.

2.3.440 FRAMEWORK ROM TIMESERIES POLYEXPONENTIAL.POLYEXPSPLINE

This test can be found at “./raven/tests/framework/ROM/TimeSeries/PolyExponential/test_poly_exponential_spline.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/PolyExponential.PolyExpSpline
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/PolyExponential.PolyExp
```

- Test Description:
 - This test is aimed to check the mechanics of the PolyExponential ROM using, for the coefficient regression, the tensor spline regression
- Original Author:
 - alfoa
- Creation date:
 - 2018-04-25
- The classes tested in this test are:
 - SupervisedLearning.PolyExponential
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject
 2. revision info:
 - author : alfoa
 - date : 2018-04-25
 - description: Adding this test description.

2.3.441 FRAMEWORK ROM TIMESERIES SYNTHETICHISTORY.FOURIER

This test can be found at “./raven/tests/framework/ROM/TimeSeries/SyntheticHistory/fourier.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/SyntheticHistory.Fourier
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/SyntheticHistory.Fourier
```

- Test Description:
 - Tests the SyntheticHistory ROM using only the Fourier TimeSeriesAnalyzer algorithm.
- Original Author:
 - talbpaul
- Creation date:
 - 2021-01-08
- The classes tested in this test are:
 - SupervisedLearning.SyntheticHistory,TSA.Fourier

2.3.442 FRAMEWORK ROM TIMESERIES SYNTHETICHISTORY.ARMA

This test can be found at “./raven/tests/framework/ROM/TimeSeries/SyntheticHistory/arma.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/SyntheticHistory.ARMA
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/SyntheticHistory.ARMA
```

- Test Description:
 - Tests the SyntheticHistory ROM using only the ARMA TimeSeriesAnalyzer algorithm.
- Original Author:

- talbpaul
- Creation date:
 - 2021-01-27
- The classes tested in this test are:
 - SupervisedLearning.SyntheticHistory,TSA.ARMA

2.3.443 FRAMEWORK ROM TIMESERIES SYNTHETICHISTORY.FOURIERARMA

This test can be found at “./raven/tests/framework/ROM/TimeSeries/SyntheticHistory/fourier_arma.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/SyntheticHistory.FourierARMA
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/SyntheticHistory.FourierARMA
```

- Test Description:
 - Tests the SyntheticHistory ROM using Fourier then ARMA TimeSeriesAnalyzer algorithms.
- Original Author:
 - talbpaul
- Creation date:
 - 2021-02-11
- The classes tested in this test are:
 - SupervisedLearning.SyntheticHistory,TSA.Fourier,TSA.ARMA

2.3.444 FRAMEWORK ROM TIMESERIES SYNTHETICHISTORY.WAVELET

This test can be found at “./raven/tests/framework/ROM/TimeSeries/SyntheticHistory/wavelet.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/SyntheticHistory.Wavelet
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/SyntheticHistory.Wavelet
```

- Test Description:
 - Tests the SyntheticHistory ROM using only the Wavelet TimeSeriesAnalyzer algorithm.
- Original Author:
 - dylanjm
- Creation date:
 - 2021-03-02
- The classes tested in this test are:
 - SupervisedLearning.SyntheticHistory,TSA.Wavelet

2.3.445 FRAMEWORK ROM TIMESERIES DMD.HIGHORDERDMD

This test can be found at “./raven/tests/framework/ROM/TimeSeries/DMD/test_high_order_dmd.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/DMD.HighOrderDMD
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/DMD.HighOrderDMD
```

- Test Description:
 - This test is aimed to check the mechanics of the High Order DMD ROM using the standard SVD-based algorithm
- Original Author:
 - alfoa
- Creation date:
 - 2018-04-25

- The classes tested in this test are:
 - SupervisedLearning.DynamicModeDecomposition
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-09
 - description: moving from ROM-file to ROM-dataobject
 2. revision info:
 - author : alfoa
 - date : 2018-04-25
 - description: Adding this test description.

2.3.446 FRAMEWORK ROM TIMESERIES DMD.PICKLEDMD

This test can be found at “./raven/tests/framework/ROM/TimeSeries/DMD/test_pickle_dmd.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/DMD.PickleDMD
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/DMD.PickleDMD
```

- Test Description:
 - This test is aimed to check that the DMD-based surrogate models can be serialized and used in a working calculation flow.
- Original Author:
 - alfoa
- Creation date:
 - 2018-06-04
- The classes tested in this test are:
 - SupervisedLearning.DynamicModeDecomposition

- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-06-04
 - description: Adding this test description.

2.3.447 FRAMEWORK ROM TIMESERIES ARMA.BASIC

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/basic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.Basic
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.Basic
```

- Test Description:
 - This test is aimed to check the possibility to train an ARMA+Fourier model and its capability to generate intrinsically stochastic time series
- Original Author:
 - alfoa
- Creation date:
 - 2017-02-02
- The classes tested in this test are:
 - SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-02-03
 - description: Adding this test description.
 2. revision info:

- author : alfoa
 - date : 2017-12-13
 - description: adapted for new DataObject structure
3. revision info:
- author : alfoa
 - date : 2018-04-26
 - description: Modified location of the test (ARMA folder)
4. revision info:
- author : talbpaul
 - date : 2018-06-14
 - description: Now tests history statistics instead of points
5. revision info:
- author : talbpaul
 - date : 2018-12-20
 - description: Renamed from ARMA to Basic and added rom printing
6. revision info:
- author : wangc
 - date : 2018-12-18
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.
7. revision info:
- author : talbpaul
 - date : 2018-09-13
 - description: changed Pmax and Pmin to P (same for Q)
8. revision info:
- author : talbpaul
 - date : 2019-01-30
 - description: reduced test to match what is tested, removed stat printing in favor of rom meta XML

2.3.448 FRAMEWORK ROM TIMESERIES ARMA.ARMAPARALLEL

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/test_ARMA_parallel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.ARMParallel
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.ARMParallel
```

- Test Description:
 - A copy of framework/ROM/TimeSeries.ARMA where the internal parallel system has been activated in order to test its functionality in conjunction with the ARMA model. This test is aimed to check the possibility to train an ARMA+Fourier model and its capability to generate intrinsically stochastic time series
- Original Author:
 - alfoa
- Creation date:
 - 2017-02-02
- The classes tested in this test are:
 - SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-02-03
 - description: Adding this test description.
 2. revision info:
 - author : talbpaul
 - date : 2017-07-12
 - description: Inserted “reseedCopies” option as False, batchSize to 2
 3. revision info:
 - author : alfoa
 - date : 2017-12-13
 - description: adapted for new DataObject structure
 4. revision info:

- author : alfoa
- date : 2018-04-26
- description: Modified location of the test (ARMA folder)

5. revision info:

- author : talbpaul
- date : 2018-09-13
- description: changed Pmax and Pmin to P (same for Q)

2.3.449 FRAMEWORK ROM TIMESERIES ARMA.ARMAPARALLELRESEED

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/arma_reseed_precursor.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.ARMAsynchronousReseed
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.ARMAsynchronousReseed
```

- Test Description:
 - Builds a reseeding copy of the ARMA to test multiple evaluations return different values; this run creates the arma and pickles it, also generates gold files for the reseed test. And added sampling for the gold file as well as rommeta.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-07-12
- The classes tested in this test are:
 - SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2017-07-12

- description: created
- 2. revision info:
 - author : alfoa
 - date : 2017-12-13
 - description: adapted for new DataObject structure
- 3. revision info:
 - author : alfoa
 - date : 2018-04-26
 - description: Modified location of the test (ARMA folder)
- 4. revision info:
 - author : talbpaul
 - date : 2018-12-20
 - description: ROM IO to data object added
- 5. revision info:
 - author : talbpaul
 - date : 2018-09-13
 - description: changed Pmax and Pmin to P (same for Q)
- 6. revision info:
 - author : zhouj
 - date : 2019-05-06
 - description: Modified location of the test to arma reseed

2.3.450 FRAMEWORK ROM TIMESERIES ARMA.ARMARESEEDTEST

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/arma_reseed_test.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.ARMAREseedTest
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.ARMAREseedTest
```

- Test Description:

- Runs an unpickled ARMA ROM and assures the histories generated are identical (by setting the batch size to 1 and internalpallelle to False in precursor and reseed test). Note that the gold file is created by running the arma_reseed_precursor test, signals_0 signals_1 signals_2 signals_3 are gold files. results_0 results_1 results_2 results_3 are the generated unpickled histories by test, then we compare they are the same.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-07-12
- The classes tested in this test are:
 - SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2017-07-12
 - description: created
 2. revision info:
 - author : alfoa
 - date : 2017-12-13
 - description: adapted for new DataObject structure
 3. revision info:
 - author : alfoa
 - date : 2018-04-26
 - description: Modified location of the test (ARMA folder)
 4. revision info:
 - author : zhouj
 - date : 2019-05-06
 - description: Modified location of the test to the same with precursor, change batch-size to 1, delete the internal parallel option, delete distribution block

2.3.451 FRAMEWORK ROM TIMESERIES ARMA.SINGLEFOURIER

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/single_fourier.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.SingleFourier
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.SingleFourier
```

- Test Description:
 - Tests that an ARMA can be trained with only a single Fourier base component
- Original Author:
 - alfoa
- Creation date:
 - 2018-05-21
- The classes tested in this test are:
 - SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-09-13
 - description: changed Pmax and Pmin to P (same for Q)

2.3.452 FRAMEWORK ROM TIMESERIES ARMA.MULTIPLEARMA

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/multiple_arma.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.MultipleArma
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.MultipleArma
```

- Test Description:
 - Tests creation of multiple INDEPENDENT target ARMA ROMs from a single training run. While it uses the entries from the correlated ARMA (VARMA) training data, it does not consider the variables correlated.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-05-09
- The classes tested in this test are:
 - SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-12-18
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.
 2. revision info:
 - author : talbpaul
 - date : 2018-09-13
 - description: changed Pmax and Pmin to P (same for Q)

2.3.453 FRAMEWORK ROM TIMESERIES ARMA.MULTIPLEFOURIER

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/multiple_fourier.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.MultipleFourier
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.MultipleFourier
```

- Test Description:
 - Tests the feature of having independent Fourier modes for each training target. Original data is pure Fourier modes made with dataGenerator. This test is not analytic, but the input training set `corralated_0.csv` should be very nearly exactly replicated by `samples_0.csv`.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-07-26
- The classes tested in this test are:
 - SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-09-13
 - description: changed Pmax and Pmin to P (same for Q)

2.3.454 FRAMEWORK ROM TIMESERIES ARMA.VARMA

This test can be found at “`./raven/tests/framework/ROM/TimeSeries/ARMA/varma.xml`”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.VARMA
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.VARMA
```

- Test Description:
 - This test checks the possibility to train a correlated ARMA model and its capability to generate intrinsically stochastic time series with correlated results. The plot output “`plot_input.png`” shows the original training data, while “`plot_VARMA.png`” plots the sampled values. B should only be slightly off from A at all points. If this same calculation is done without correlation, both A and B independently range over the value

space, and B can be far from A for each Time value. This provides a quick view norm to see that the correlation is working correctly.

- Original Author:
 - talbpaul
- Creation date:
 - 2018-05-15
- The classes tested in this test are:
 - SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-10-16
 - description: split off for smaller mechanics run
 2. revision info:
 - author : wangc
 - date : 2018-12-18
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.
 3. revision info:
 - author : talbpaul
 - date : 2018-09-13
 - description: changed Pmax and Pmin to P (same for Q)

2.3.455 FRAMEWORK ROM TIMESERIES ARMA.VARMAHEAVY

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/varma_heavy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.VARMAheavy
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.VARMAheavy
```

- Test Description:
 - This test checks the possibility to train a correlated ARMA model and its capability to generate intrinsically stochastic time series with correlated results. The data is generated using dataGenerator in the working directory. The plot output “plot_input.png” shows the original training data, while “plot_VARMA.png” plots the sampled values. B should only be slightly off from A at all points. If this same calculation is done without correlation, both A and B independently range over the value space, and B can be far from A for each Time value. This provides a quick view norm to see that the correlation is working correctly.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-05-15
- The classes tested in this test are:
 - SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-10-16
 - description: split off for a heavy test for statistical convergence
 2. revision info:
 - author : wangc
 - date : 2018-12-18
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.
 3. revision info:
 - author : talbpaul
 - date : 2018-09-13
 - description: changed Pmax and Pmin to P (same for Q)

2.3.456 FRAMEWORK ROM TIMESERIES ARMA.ZEROFILTER

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/zero_filter.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.ZeroFilter
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.ZeroFilter
```

- Test Description:
 - Tests the ZeroFilter functionality of the ARMA, including as a correlated variable. Note the mean and variance especially of GHI change significantly if the zero-filtering is not working.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-08-29
- The classes tested in this test are:
 - SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-12-18
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.
 2. revision info:
 - author : talbpaul
 - date : 2018-09-13
 - description: changed Pmax and Pmin to P (same for Q)

2.3.457 FRAMEWORK ROM TIMESERIES ARMA.SEGMENTED

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/segmented.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.Segmented
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.Segmented
```

- Test Description:
 - Tests the mechanics of clusterering the “time” subspace of the ARMA ROM.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-11-20
- The classes tested in this test are:
 - SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-12-19
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.
 2. revision info:
 - author : talbpaul
 - date : 2019-01-30
 - description: Added a pickling step to check serialization of segmented ARMA.
 3. revision info:

- author : JiaZhouPU
- date : 2019-05-02
- description: Deleted the longest Fourier period for this test, because the phase of this period would have results between PI and negative PI(a result of $\arctan(\infty)$), and cannot be detected from the xml check.

2.3.458 FRAMEWORK ROM TIMESERIES ARMA.CLUSTERED

This test can be found at “. /raven/tests/framework/ROM/TimeSeries/ARMA/clustered.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.Clustered
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.Clustered
```

- Test Description:
 - Tests the mechanics of clusterering the ”time” subspace of the ARMA ROM.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-11-20
- The classes tested in this test are:
 - SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2020-01-18
 - description: added sampling, clarified to clustered representation

2.3.459 FRAMEWORK ROM TIMESERIES ARMA.CLUSTEREDTRUNCATED

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/clustered_truncated.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.ClusteredTruncated
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.ClusteredTruncated
```

- Test Description:
 - Tests the mechanics of clustering the “time” subspace of the ARMA ROM. Resulting histories are represented in the “truncated” format, where each cluster is placed sequentially one after another.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-11-20
- The classes tested in this test are:
 - SupervisedLearning.ARMA

2.3.460 FRAMEWORK ROM TIMESERIES ARMA.CLUSTEREDRANDCHOICE

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/clustered_choice_rand.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.ClusteredRandChoice
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.ClusteredRandChoice
```

- Test Description:

- Tests the mechanics of clusterereng the "time" subspace of the ARMA ROM, with a random choice of the clustered ROMs in the evaluation stage
- Original Author:
 - alfoa
- Creation date:
 - 2020-04-15
- The classes tested in this test are:
 - SupervisedLearning.ARMA

2.3.461 FRAMEWORK ROM TIMESERIES ARMA.PRESERVECDF

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/preserve_cdf.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.PreserveCdf
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.PreserveCdf
```

- Test Description:
 - Tests the feature (Models.ARMA.preserveInputCDF) to preserve the CDF of the input training data when producing synthetic histories. The standard is being able to identically match the original data's ValueDuration curve. Currently, there's not a Metric for comparing a single gold standard to several samples; thus we read in a second history set with the ValueDuration curve of the training set repeated 10 times for comparison to the sample ValueDuration curves.
- Original Author:
 - talbpaul
- Creation date:
 - 2019-01-22
- The classes tested in this test are:

- SupervisedLearning.ARMA
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-22
 - description: created

2.3.462 FRAMEWORK ROM TIMESERIES ARMA.MULTICYCLE

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/multicycle.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.Multicycle
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.Multicycle
```

- Test Description:
 - Tests sampling the ARMA with multiple cycles in each sample. As a check, assure that for each realization, the ratio between the mean of cycles 1 and 0 should be near 1.5, and the ratio between cycles 2 and 0 should be 2.25. Further, check that when ensembled the pass-through value is usable (mostly a check for ND data).
- Original Author:
 - talbpaul
- Creation date:
 - 2019-05-14
- The classes tested in this test are:
 - SupervisedLearning.ARMA

2.3.463 FRAMEWORK ROM TIMESERIES ARMA.MULTICYCLERESEED

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/multicycle_reseed.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.MulticycleReseed
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.MulticycleReseed
```

- Test Description:
 - Tests that the number of sampled cycles can be changed on an ARMA during unserialization. It takes the pickled ARMA from “multicycles” and changes the number of cycles as well as the growth rate. The resulting DataSet CSV should have Cycles 0 and 1 only, and the values for Cycle 1 should be notably higher than Cycle 0 on average. As a check, for each realization, the ratio between cycle 1 and cycle 0 should be near 2.5.
- Original Author:
 - talbpaul
- Creation date:
 - 2019-05-15
- The classes tested in this test are:
 - SupervisedLearning.ARMA

2.3.464 FRAMEWORK ROM TIMESERIES ARMA.PEAKS

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/peaks.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.Peaks
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.Peaks
```

- Test Description:
 - This test is aimed to check the possibility to train an ARMA+Fourier+Peaks model and its capability to generate intrinsically stochastic time series
- Original Author:
 - ZHOUI
- Creation date:
 - 2019-05-29
- The classes tested in this test are:
 - SupervisedLearning.ARMA

2.3.465 FRAMEWORK ROM TIMESERIES ARMA.INTERPOLATED

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/interpolated.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.Interpolated
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.Interpolated
```

- Test Description:
 - Tests the mechanics of providing several set points for ARMAs on different years and interpolating the ARMAs to fill missing years. Note that as implemented, interpolating assumes clustering. The output `synthetic.csv` is the *truncated* output form, with the clusters stacked sequentially. The output `resynthetic.csv` is the *clustered* form, with `_ROM_Cluster` as one of the index dimensions.
- Original Author:
 - talbpaul
- Creation date:
 - 2019-05-22
- The classes tested in this test are:
 - SupervisedLearning.ARMA

2.3.466 FRAMEWORK ROM TIMESERIES ARMA.INTERPOLATEDMAXCYCLES

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/interpolated_maxcycles.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.InterpolatedMaxCycles
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.InterpolatedMaxCycles
```

- Test Description:
 - Similar to “interpolated” test, but limits the number of cycles (years) sampled. `synthetic.csv` should have Year values of (0, 1, 2) while `resynthetic.csv` should have Year values of (0, 1). Also tests the `nyquistScalar` option.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-01-19
- The classes tested in this test are:
 - `SupervisedLearning.ROMCollection`

2.3.467 FRAMEWORK ROM TIMESERIES ARMA.CLOUDPLOT

This test can be found at “./raven/tests/framework/ROM/TimeSeries/ARMA/cloud_plot.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TimeSeries/ARMA.CloudPlot
```

or

```
./run_framework_tests --re=framework/ROM/TimeSeries/ARMA.CloudPlot
```

- Test Description:
 - Tests the custom synthetic history cloud plot.

- Original Author:
 - talbpaul
- Creation date:
 - 2020-09-02
- The classes tested in this test are:
 - OutStreams.SyntheticCloud

2.3.468 FRAMEWORK ROM MSR.BIWEIGHT

This test can be found at “./raven/tests/framework/ROM/MSR/test_biweight.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.biweight
```

or

```
./run_framework_tests --re=framework/ROM/MSR.biweight
```

- Test Description:
 - An example of using the Morse-Smale regression reduced order model with a biweight kernel function for the kernel density estimator.
 Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.
- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : maljdan
- date : 2015-10-21
- description: Converting AMSR test files using the provided conversion script.

2. revision info:

- author : talbpaul
- date : 2016-02-08
- description: first update, looking for more failing tests to add

3. revision info:

- author : maljdan
- date : 2016-02-10
- description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.

4. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.469 FRAMEWORK ROM MSR.COSINE

This test can be found at “./raven/tests/framework/ROM/MSR/test_cosine.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.cosine
```

or

```
./run_framework_tests --re=framework/ROM/MSR.cosine
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with a cosine kernel function for the kernel density estimator.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.470 FRAMEWORK ROM MSR.EPANECHNIKOV

This test can be found at “./raven/tests/framework/ROM/MSR/test_Epanechnikov.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.Epanechnikov
```

or

```
./run_framework_tests --re=framework/ROM/MSR.Epanechnikov
```

- Test Description:
 - An example of using the Morse-Smale regression reduced order model with an Epanechnikov kernel function for the kernel density estimator.
Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.
- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:

- author : maljdan
- date : 2016-02-10
- description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.

4. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.471 FRAMEWORK ROM MSR.EXPONENTIAL

This test can be found at “./raven/tests/framework/ROM/MSR/test_exponential.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.exponential
```

or

```
./run_framework_tests --re=framework/ROM/MSR.exponential
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with an exponential kernel function for the kernel density estimator.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:

- maljdan

- Creation date:

- 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.472 FRAMEWORK ROM MSR.GAUSSIAN

This test can be found at “./raven/tests/framework/ROM/MSR/test_Gaussian.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.Gaussian
```

or

```
./run_framework_tests --re=framework/ROM/MSR.Gaussian
```

- Test Description:
 - An example of using the Morse-Smale regression reduced order model with a Gaussian kernel function for the kernel density estimator.
Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.
- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.473 FRAMEWORK ROM MSR.LOGISTIC

This test can be found at “./raven/tests/framework/ROM/MSR/test_logistic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.logistic
```

or

```
./run_framework_tests --re=framework/ROM/MSR.logistic
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with a logistic kernel function for the kernel density estimator.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:

- maljdan

- Creation date:

- 2015-10-06

- The classes tested in this test are:

- SupervisedLearning.MSR

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
2. revision info:
- author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
3. revision info:
- author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
4. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
5. revision info:
- author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.474 FRAMEWORK ROM MSR.SILVERMAN

This test can be found at “./raven/tests/framework/ROM/MSR/test_Silverman.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.Silverman
```

or

```
./run_framework_tests --re=framework/ROM/MSR.Silverman
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with a Silverman kernel function for the kernel density estimator.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.475 FRAMEWORK ROM MSR.TRIANGULAR

This test can be found at “./raven/tests/framework/ROM/MSR/test_triangular.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.triangular
```

or

```
./run_framework_tests --re=framework/ROM/MSR.triangular
```

- Test Description:
 - An example of using the Morse-Smale regression reduced order model with a triangular kernel function for the kernel density estimator.
Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.
- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:

- author : maljdan
- date : 2016-02-10
- description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.

4. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.476 FRAMEWORK ROM MSR.TRICUBE

This test can be found at “./raven/tests/framework/ROM/MSR/test_tricube.xml”.
 This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.tricube
```

or

```
./run_framework_tests --re=framework/ROM/MSR.tricube
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with a tricube kernel function for the kernel density estimator.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:

- maljdan

- Creation date:

- 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.477 FRAMEWORK ROM MSR.TRIWEIGHT

This test can be found at “./raven/tests/framework/ROM/MSR/test_triweight.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.triweight
```

or

```
./run_framework_tests --re=framework/ROM/MSR.triweight
```

- Test Description:
 - An example of using the Morse-Smale regression reduced order model with a triweight kernel function for the kernel density estimator.
Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.
- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.478 FRAMEWORK ROM MSR.UNIFORM

This test can be found at “./raven/tests/framework/ROM/MSR/test_uniform.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.uniform
```

or

```
./run_framework_tests --re=framework/ROM/MSR.uniform
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with a uniform kernel function for the kernel density estimator.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:

- maljdan

- Creation date:

- 2015-10-06

- The classes tested in this test are:

- SupervisedLearning.MSR

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
2. revision info:
- author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
3. revision info:
- author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
4. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
5. revision info:
- author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.479 FRAMEWORK ROM MSR.SVM

This test can be found at “./raven/tests/framework/ROM/MSR/test_SVM.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.SVM
```

or

```
./run_framework_tests --re=framework/ROM/MSR.SVM
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with a support vector machine.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Using custom sampler blocks for the MSR-SVM tests.
 5. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.

6. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.480 FRAMEWORK ROM MSR.SMOOTHSVM

This test can be found at “./raven/tests/framework/ROM/MSR/test_smooth_SVM.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.smoothSVM
```

or

```
./run_framework_tests --re=framework/ROM/MSR.smoothSVM
```

- Test Description:
 - An example of using the Morse-Smale regression reduced order model with a support vector machine. This is a smoothed version of MSR where local models are blended together.
Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.
- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21

- description: Converting AMSR test files using the provided conversion script.
2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Using custom sampler blocks for the MSR-SVM tests.
 5. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 6. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.481 FRAMEWORK ROM MSR.SMOOTHBIWEIGHT

This test can be found at “./raven/tests/framework/ROM/MSR/test_smooth_biweight.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.smoothBiweight
```

or

```
./run_framework_tests --re=framework/ROM/MSR.smoothBiweight
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with a biweight kernel function for the kernel density estimator. This is a smoothed version of MSR where local models are blended together.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.482 FRAMEWORK ROM MSR.SMOOTHCOSINE

This test can be found at “. /raven/tests/framework/ROM/MSR/test_smooth_cosine.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.smoothCosine
```

or

```
./run_framework_tests --re=framework/ROM/MSR.smoothCosine
```

- Test Description:
 - An example of using the Morse-Smale regression reduced order model with a cosine kernel function for the kernel density estimator. This is a smoothed version of MSR where local models are blended together.
Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.
- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.

2. revision info:

- author : talbpaul
- date : 2016-02-08
- description: first update, looking for more failing tests to add

3. revision info:

- author : maljdan
- date : 2016-02-10
- description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.

4. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.483 FRAMEWORK ROM MSR.SMOOTHEPANECHNIKOV

This test can be found at “./raven/tests/framework/ROM/MSR/test_smooth_Epanechnikov.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.smoothEpanechnikov
```

or

```
./run_framework_tests --re=framework/ROM/MSR.smoothEpanechnikov
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with an Epanechnikov kernel function for the kernel density estimator. This is a smoothed version of MSR where local models are blended together.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.484 FRAMEWORK ROM MSR.SMOOTHEXPONENTIAL

This test can be found at “./raven/tests/framework/ROM/MSR/test_smooth_exponential.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.smoothExponential
```

or

```
./run_framework_tests --re=framework/ROM/MSR.smoothExponential
```

- Test Description:
 - An example of using the Morse-Smale regression reduced order model with an exponential kernel function for the kernel density estimator. This is a smoothed version of MSR where local models are blended together.
Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.
- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add

3. revision info:

- author : maljdan
- date : 2016-02-10
- description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.

4. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.485 FRAMEWORK ROM MSR.SMOOTHGAUSSIAN

This test can be found at “./raven/tests/framework/ROM/MSR/test_smooth_Gaussian.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.smoothGaussian
```

or

```
./run_framework_tests --re=framework/ROM/MSR.smoothGaussian
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with a Gaussian kernel function for the kernel density estimator. This is a smoothed version of MSR where local models are blended together.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:

- maljdan

- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.486 FRAMEWORK ROM MSR.SMOOTHLOGISTIC

This test can be found at “./raven/tests/framework/ROM/MSR/test_smooth_logistic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.smoothLogistic
```

or

```
./run_framework_tests --re=framework/ROM/MSR.smoothLogistic
```

- Test Description:
 - An example of using the Morse-Smale regression reduced order model with a logistic kernel function for the kernel density estimator. This is a smoothed version of MSR where local models are blended together.
Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.
- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.

4. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.487 FRAMEWORK ROM MSR.SMOOTHSILVERMAN

This test can be found at “./raven/tests/framework/ROM/MSR/test_smooth_Silverman.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.smoothSilverman
```

or

```
./run_framework_tests --re=framework/ROM/MSR.smoothSilverman
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with a Silverman kernel function for the kernel density estimator. This is a smoothed version of MSR where local models are blended together.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:

- maljdan

- Creation date:

- 2015-10-06

- The classes tested in this test are:

- SupervisedLearning.MSR

- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.488 FRAMEWORK ROM MSR.SMOOTHTRIANGULAR

This test can be found at “./raven/tests/framework/ROM/MSR/test_smooth_triangular.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.smoothTriangular
```

or

```
./run_framework_tests --re=framework/ROM/MSR.smoothTriangular
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with a triangular kernel function for the kernel density estimator. This is a smoothed version of MSR where local models are blended together.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.489 FRAMEWORK ROM MSR.SMOOTHTRICUBE

This test can be found at “./raven/tests/framework/ROM/MSR/test_smooth_tricube.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.smoothTricube
```

or

```
./run_framework_tests --re=framework/ROM/MSR.smoothTricube
```

- Test Description:
 - An example of using the Morse-Smale regression reduced order model with a tricube kernel function for the kernel density estimator. This is a smoothed version of MSR where local models are blended together.
Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.
- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.

2. revision info:

- author : talbpaul
- date : 2016-02-08
- description: first update, looking for more failing tests to add

3. revision info:

- author : maljdan
- date : 2016-02-10
- description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.

4. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.490 FRAMEWORK ROM MSR.SMOOTHTRIWEIGHT

This test can be found at “./raven/tests/framework/ROM/MSR/test_smooth_triweight.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.smoothTriweight
```

or

```
./run_framework_tests --re=framework/ROM/MSR.smoothTriweight
```

- Test Description:

- An example of using the Morse-Smale regression reduced order model with a triweight kernel function for the kernel density estimator. This is a smoothed version of MSR where local models are blended together.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 3. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.491 FRAMEWORK ROM MSR.SMOOTHUNIFORM

This test can be found at “./raven/tests/framework/ROM/MSR/test_smooth_uniform.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.smoothUniform
```

or

```
./run_framework_tests --re=framework/ROM/MSR.smoothUniform
```

- Test Description:
 - An example of using the Morse-Smale regression reduced order model with a uniform kernel function for the kernel density estimator. This is a smoothed version of MSR where local models are blended together.
Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.
- Original Author:
 - maljdan
- Creation date:
 - 2015-10-06
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-10-21
 - description: Converting AMSR test files using the provided conversion script.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add

3. revision info:

- author : maljdan
- date : 2016-02-10
- description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.

4. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.492 FRAMEWORK ROM MSR.PARALLEL

This test can be found at “. /raven/tests/framework/ROM/MSR/test_local_parallel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/MSR.parallel
```

or

```
./run_framework_tests --re=framework/ROM/MSR.parallel
```

- Test Description:

- A copy of framework/ROM/MSR.uniform where the internal parallel system has been activated in order to test its functionality in conjunction with the MSR.

Note, all of the tests in MSR operate on a 2D input domain with the goal of fitting a single Gaussian bump. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly.

- Original Author:

- maljdan

- Creation date:

- 2015-10-28
- The classes tested in this test are:
 - SupervisedLearning.MSR
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: first update, looking for more failing tests to add
 2. revision info:
 - author : maljdan
 - date : 2016-02-10
 - description: Adding functionality to allow a user to specify a filename for an Out-stream object that is potentially different than its variable name in the RAVEN input file. Adjusting test cases to exercise this functionality.
 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 4. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.493 FRAMEWORK STOCHPOLYPICKLETEST

This test can be found at “./raven/tests/framework/ROM/pickleTests/stochpoly_pickle.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/stochPolyPickleTest
```

or

```
./run_framework_tests --re=framework/stochPolyPickleTest
```

- Test Description:

- This test checks the pickling and unpickling of the GaussPolynomialROM
- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:
 - SupervisedLearning.GaussPolynomialROM

2.3.494 FRAMEWORK ROM COLDRESTART

This test can be found at “./raven/tests/framework/ROM/pickleTests/restart_stochpoly_rom.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/coldRestart
```

or

```
./run_framework_tests --re=framework/ROM/coldRestart
```

- Test Description:
 - This tests the ability of a ROM to be unpickled and used with minimal specification, and without the typically-associated Sampler for the GaussPolynomialROM.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-03-21
- The classes tested in this test are:
 - SupervisedLearning.GaussPolynomialROM

2.3.495 FRAMEWORK ROM PICKLETESTS LOADUNTRAINEDERROR

This test can be found at “./raven/tests/framework/ROM/pickleTests/untrained_error.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/pickleTests/loadUntrainedError
```

or

```
./run_framework_tests --re=framework/ROM/pickleTests/loadUntrainedError
```

- Test Description:
 - This test checks that a reasonable error is given to the user if an untrained rom is unpickled then sampled.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:
 - Models.ROM

2.3.496 FRAMEWORK ROM PICKLETESTS LOADNORROMERROR

This test can be found at “./raven/tests/framework/ROM/pickleTests/not_a_rom_error.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/pickleTests/loadNorROMError
```

or

```
./run_framework_tests --re=framework/ROM/pickleTests/loadNorROMError
```

- Test Description:
 - This test checks that a reasonable error is given to the user if they attempt to unpickle a pickled object that isn't a ROM.

- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:
 - Models.ROM

2.3.497 FRAMEWORK ROM PICKLETESTS LOADNORROMERROR

This test can be found at “./raven/scripts/externalROMloader.pyload_ROM_externally.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/pickleTests/loadNorROMError
```

or

```
./run_framework_tests --re=framework/ROM/pickleTests/loadNorROMError
```

- Test Description:
 - This test checks that a reasonable error is given to the user if they attempt to unpickle a pickled object that isn't a ROM.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:
 - Models.ROM

2.3.498 FRAMEWORK SAMPLERS ROM TENSORFLOW KERAS.TF CNN1D

This test can be found at “./raven/tests/framework/ROM/tensorflow_keras/cnn1d.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/tensorflow_keras.tf_cnn1d
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/tensorflow_keras.tf_cnn1d
```

- Test Description:
 - Test the capability of convolutional neural network (CNN) 1D using TensorFlow/Keras Multilayers is used, the CNN-1D will accept (numSamples,timeSteps,Features) as training input, and accept (timeSteps, Features) as prediction input. Ensemble model is used in order to generate time-dependent input for CNN models.
- Original Author:
 - wangc
- Creation date:
 - 2019-02-07
- The classes tested in this test are:
 - Models.ROM

2.3.499 FRAMEWORK SAMPLERS ROM TENSORFLOW KERAS.TF MLPC

This test can be found at “./raven/tests/framework/ROM/tensorflow_keras/custom_dataset.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/tensorflow_keras.tf_mlpc
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/tensorflow_keras.tf_mlpc
```

- Test Description:

- Test the capability of multilayer perceptron classifier (mlpc) using TensorFlow/Keras. The train (row 1-728) and test (row 729-768) data are generated from "Pima Indians Diabetes Database". CustomSampler is used to convert the csv format data into PointSet, and it is also used to test the trained mlpc with the test data. (<https://www.kaggle.com/kumargh/pimainc>)
- Original Author:
 - wangc
- Creation date:
 - 2019-02-07
- The classes tested in this test are:
 - Models.ROM

2.3.500 FRAMEWORK SAMPLERS ROM TENSORFLOW KERAS.TF LSTM

This test can be found at ". /raven/tests/framework/ROM/tensorflow_keras/lstm.xml". This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/tensorflow_keras.tf_lstm
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/tensorflow_keras.tf_lstm
```

- Test Description:
 - Test the capability of convolutional long short-term memory (lstm) using TensorFlow/Keras. Multilayers is used, the lstm will accept (numSamples,timeSteps,Features) as training input, and accept (timeSteps, Features) as prediction input. Ensemble model is used in order to generate time-dependent input for lstm models.
- Original Author:
 - wangc
- Creation date:
 - 2019-02-07
- The classes tested in this test are:
 - Models.ROM

2.3.501 FRAMEWORK ROM TENSORFLOW KERAS KERAS LSTM REGRESSION

This test can be found at “./raven/tests/framework/ROM/tensorflow_keras/keras_lstm_regression.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/tensorflow_keras/keras_lstm_regression
```

or

```
./run_framework_tests --re=framework/ROM/tensorflow_keras/keras_lstm_regression
```

- Test Description:
 - Test the Keras LSTM Regression using a simple sum of sine waves. The data was generated in the spreadsheet LSTMRegression/sine_data.ods Note that a real LSTM would need more training data.
- Original Author:
 - @coglj
- Creation date:
 - 2021-04-13
- The classes tested in this test are:
 - KerasLSTMRegression

2.3.502 FRAMEWORK ROM SKLEARN.LINEARSVC

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearSVC.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearSVC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearSVC
```

- Test Description:

- An example exercising supervised sklearn methods, specifically the svm—LinearSVC model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-05-02
 - description: Fixing the random_state of the SVMs.
 2. revision info:
 - author : maljdan
 - date : 2016-05-02
 - description: Fixing another SVC case for older scikit-learn versions.
 3. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 4. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.503 FRAMEWORK ROM SKLEARN.SVC

This test can be found at “./raven/tests/framework/ROM/SKLearn/svc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.SVC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.SVC
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the svm—SVC model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-05-02
 - description: Fixing the random_state of the SVMs.
 2. revision info:
 - author : maljdan
 - date : 2016-05-02

- description: There is an issue with version compatibility in sklearn, so I am disabling one of the parameters in the input and documenting it.

3. revision info:

- author : talbpaul
- date : 2016-09-15
- description: other test updates

4. revision info:

- author : cogljj
- date : 2016-11-18
- description: Switching floats to integers because they are.

5. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.504 FRAMEWORK ROM SKLEARN.NUSVC

This test can be found at “./raven/tests/framework/ROM/SKLearn/nuSVC.xml”.
This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.NuSVC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.NuSVC
```

- Test Description:

- An example exercising supervised sklearn methods, specifically the svm—NuSVC model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:

- maljdan

- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-05-02
 - description: Fixing the random_state of the SVMs.
 2. revision info:
 - author : maljdan
 - date : 2016-05-02
 - description: There is an issue with version compatibility in sklearn, so I am disabling one of the parameters in the input and documenting it.
 3. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 4. revision info:
 - author : cogljj
 - date : 2016-11-18
 - description: Switching floats to integers because they are.
 5. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.505 FRAMEWORK ROM SKLEARN.OCC

This test can be found at “./raven/tests/framework/ROM/SKLearn/occ.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.OCC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.OCC
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—LinearRegression model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-04-28
 - description: Fixing the multiclass SKL types to allow for embedded estimators.
 2. revision info:
 - author : alfoa
 - date : 2016-07-13
 - description: removed renormalization
 3. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 4. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.506 FRAMEWORK ROM SKLEARN.KNC

This test can be found at “./raven/tests/framework/ROM/SKLearn/knc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.KNC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.KNC
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the neighbors—KNeighborsClassifier model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.507 FRAMEWORK ROM SKLEARN.RNC

This test can be found at “./raven/tests/framework/ROM/SKLearn/rnc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.RNC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.RNC
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the neighbors—RadiusNeighbors model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.508 FRAMEWORK ROM SKLEARN.NCC

This test can be found at “./raven/tests/framework/ROM/SKLearn/ncc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.NCC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.NCC
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the neighbors—NearestCentroid model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.509 FRAMEWORK ROM SKLEARN.OVR

This test can be found at “./raven/tests/framework/ROM/SKLearn/ovr.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.OVR
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.OVR
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—LinearRegression model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-04-28
 - description: Fixing the multiclass SKL types to allow for embedded estimators.
 2. revision info:
 - author : alfoa
 - date : 2016-07-13
 - description: removed renormalization

3. revision info:

- author : talbpaul
- date : 2016-09-15
- description: other test updates

4. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.510 FRAMEWORK ROM SKLEARN.OVO

This test can be found at “./raven/tests/framework/ROM/SKLearn/ovo.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.OVO
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.OVO
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—LinearRegression model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn

- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-04-28
 - description: Fixing the multiclass SKL types to allow for embedded estimators.
 2. revision info:
 - author : alfoa
 - date : 2016-07-13
 - description: removed renormalization
 3. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 4. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.511 FRAMEWORK ROM SKLEARN.GAUSSIANNB

This test can be found at “./raven/tests/framework/ROM/SKLearn/gaussianNB.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.GaussianNB
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.GaussianNB
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the naiveBayes—GaussianNB model is tested here.
 Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.512 FRAMEWORK ROM SKLEARN.BERNOULLINB

This test can be found at “./raven/tests/framework/ROM/SKLearn/bernoulliNB.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.BernoulliNB
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.BernoulliNB
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the naiveBayes—BernoulliNB model is tested here.
 Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.513 FRAMEWORK ROM SKLEARN.LINEARRIDGEC

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearRidgeC.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearRidgeC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearRidgeC
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—RidgeClassifier model is tested here.
 Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-07-13
 - description: removed renormalization
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 3. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.514 FRAMEWORK ROM SKLEARN.LINEARRIDGECCV

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearRidgeCCV.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearRidgeCCV
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearRidgeCCV
```

- Test Description:

- An example exercising supervised sklearn methods, specifically the linear_model—RidgeClassifierCV model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-07-13
 - description: removed renormalization
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 3. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.515 FRAMEWORK ROM SKLEARN.LINEARPAC

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearPAC.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearPAC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearPAC
```

- Test Description:

- An example exercising supervised sklearn methods, specifically the linear_model—PassiveAggressive model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:

- maljdan

- Creation date:

- 2016-04-28

- The classes tested in this test are:

- SupervisedLearning.SciKitLearn

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : maljdan
- date : 2016-05-02
- description: Adding a fixed random_state value to a few of the ROM tests to ensure reproducibility.

2. revision info:

- author : talbpaul
- date : 2016-09-15
- description: other test updates

3. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.516 FRAMEWORK ROM SKLEARN.LINEARSGDC

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearSGDC.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearSGDC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearSGDC
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—SGDClassifier model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-05-02
 - description: Adding a fixed random_state value to a few of the ROM tests to ensure reproducibility.
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15

- description: other test updates
3. revision info:
- author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.517 FRAMEWORK ROM SKLEARN.MULTINOMIALNB

This test can be found at “./raven/tests/framework/ROM/SKLearn/multinomialNB.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.MultinomialNB
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.MultinomialNB
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the naiveBayes—MultinomialNB model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : maljdan
 - date : 2016-04-28
 - description: Checkpointing. Only a few failing cases left.
2. revision info:
- author : talbpaul
 - date : 2016-09-15
 - description: other test updates
3. revision info:
- author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.
4. revision info:
- author : wangc
 - date : 2018-08-08
 - description: change the grid values that will within the bounds of distribution

2.3.518 FRAMEWORK ROM SKLEARN.DTC

This test can be found at “./raven/tests/framework/ROM/SKLearn/dtc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.DTC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.DTC
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the tree—DecisionTreeClassifier model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:

- maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-05-02
 - description: Adding a fixed random_state value to a few of the ROM tests to ensure reproducibility.
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 3. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.519 FRAMEWORK ROM SKLEARN.ETC

This test can be found at “./raven/tests/framework/ROM/SKLearn/etc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.ETC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.ETC
```

- Test Description:

- An example exercising supervised sklearn methods, specifically the tree—ExtraTreeClassifier model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-05-02
 - description: Adding a fixed random_state value to a few of the ROM tests to ensure reproducibility.
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 3. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.520 FRAMEWORK ROM SKLEARN.MLPCLASSIFIER

This test can be found at “./raven/tests/framework/ROM/SKLearn/mlpClassifier.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.MLPClassifier
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.MLPClassifier
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the `neural_network.MLPRegressor` model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - wangc
- Creation date:
 - 2017-10-25
- The classes tested in this test are:
 - `SupervisedLearning.SciKitLearn`

2.3.521 FRAMEWORK ROM SKLEARN.SVR

This test can be found at “`./raven/tests/framework/ROM/SKLearn/svr.xml`”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.SVR
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.SVR
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the `svm—SVR` model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one

dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-05-02
 - description: There is an issue with version compatibility in sklearn, so I am disabling one of the parameters in the input and documenting it.
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 3. revision info:
 - author : cogljj
 - date : 2016-11-18
 - description: Switching floats to integers because they are.
 4. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.522 FRAMEWORK ROM SKLEARN.KNR

This test can be found at “. /raven/tests/framework/ROM/SKLearn/knr.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.KNR
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.KNR
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the neighbors—KNeighborsRegressor model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.523 FRAMEWORK ROM SKLEARN.RNR

This test can be found at “./raven/tests/framework/ROM/SKLearn/rnr.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.RNR
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.RNR
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the neighbors—RadiusNeighborsRegressor model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-04-28
 - description: Fixing RadiusNeighborsRegressor test case to use the correct SKL-type in the input file.
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15

- description: other test updates
3. revision info:
- author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.524 FRAMEWORK ROM SKLEARN.QDA

This test can be found at “./raven/tests/framework/ROM/SKLearn/qda.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.QDA
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.QDA
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the qda—QDA model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : talbpaul
- date : 2016-09-15
- description: other test updates

2. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.525 FRAMEWORK ROM SKLEARN.GP

This test can be found at “./raven/tests/framework/ROM/SKLearn/gp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.GP
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.GP
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the GaussianProcess—GaussianProcess model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : talbpaul
- date : 2016-09-15
- description: other test updates

2. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.526 FRAMEWORK ROM SKLEARN.LINEARARD

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearARD.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearARD
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearARD
```

- Test Description:

- An example exercising supervised sklearn methods, specifically the linear_model—ARDRegression model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:

- maljdan

- Creation date:

- 2016-04-28

- The classes tested in this test are:

- SupervisedLearning.SciKitLearn

- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-07-13
 - description: removed renormalization
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 3. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.527 FRAMEWORK ROM SKLEARN.LINEARBAYESIANRIDGE

This test can be found at “. /raven/tests/framework/ROM/SKLearn/linearBayesianRidge.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearBayesianRidge
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearBayesianRidge
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—BayesianRidge model is tested here.
 Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan

- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.528 FRAMEWORK ROM SKLEARN.LINEARELASTICNET

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearElasticNet.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearElasticNet
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearElasticNet
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—ElasticNet model is tested here.
 Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:

- maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-07-13
 - description: removed renormalization
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 3. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.529 FRAMEWORK ROM SKLEARN.LINEARELASTICNETCV

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearElasticNetCV.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearElasticNetCV
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearElasticNetCV
```

- Test Description:

- An example exercising supervised sklearn methods, specifically the linear_model—ElasticNetCV model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.530 FRAMEWORK ROM SKLEARN.LINEARLARS

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearLARS.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearLARS
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearLARS
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—Lars model is tested here.
 - Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.531 FRAMEWORK ROM SKLEARN.LINEARLARSCV

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearLARSCV.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearLARSCV
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearLARSCV
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—LarsCV model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.532 FRAMEWORK ROM SKLEARN.LINEARLASSO

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearLasso.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearLasso
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearLasso
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—Lasso model is tested here.
 - Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-07-13
 - description: removed renormalization
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 3. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.533 FRAMEWORK ROM SKLEARN.LINEARLASSOCV

This test can be found at “. /raven/tests/framework/ROM/SKLearn/linearLassoCV.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearLassoCV
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearLassoCV
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—LassoCV model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.534 FRAMEWORK ROM SKLEARN.LINEARLASSOLARS

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearLassoLARS.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearLassoLARS
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearLassoLARS
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—LassoLars model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.535 FRAMEWORK ROM SKLEARN.LINEARLASSOLARSCV

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearLassoLARSCV.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearLassoLARSCV
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearLassoLARSCV
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—LassoLarsCV model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.536 FRAMEWORK ROM SKLEARN.LINEARLASSOLARSIC

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearLassoLARSIC.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearLassoLARSIC
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearLassoLARSIC
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—LassoLarsIC model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.537 FRAMEWORK ROM SKLEARN.LINEARREGRESSION

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearRegression.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearRegression
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearRegression
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—LinearRegression model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-07-13
 - description: removed renormalization
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates

3. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.538 FRAMEWORK ROM SKLEARN.LINEARLOGISTICREGRESSION

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearLogisticRegression.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearLogisticRegression
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearLogisticRegression
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—LogisticRegression model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15

- description: other test updates
2. revision info:
- author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.539 FRAMEWORK ROM SKLEARN.LINEARMULTITASKLASSO

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearMultiTaskLasso.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearMultiTaskLasso
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearMultiTaskLasso
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—MultiTaskLasso model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : alfoa
 - date : 2016-07-13
 - description: removed renormalization
2. revision info:
- author : talbpaul
 - date : 2016-09-15
 - description: other test updates
3. revision info:
- author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.540 FRAMEWORK ROM SKLEARN.LINEARMULTITASKELASTICNET

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearMultiTaskElasticNet.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearMultiTaskElasticNet
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearMultiTaskElasticNet
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—MultiTaskElasticNet model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28

- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-04-28
 - description: Adding gold files and fixing MultiTaskElasticNet
 2. revision info:
 - author : alfoa
 - date : 2016-07-13
 - description: removed renormalization
 3. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 4. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.541 FRAMEWORK ROM SKLEARN.LINEAROMP

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearOMP.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearOMP
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearOMP
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—OrthogonalMatchingPursuit model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.542 FRAMEWORK ROM SKLEARN.LINEAROMPCV

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearOMPCV.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearOMPCV
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearOMPCV
```

- Test Description:

- An example exercising supervised sklearn methods, specifically the linear_model—OrthogonalMatchingPursuit model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.543 FRAMEWORK ROM SKLEARN.LINEARPERCEPTRON

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearPerceptron.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearPerceptron
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearPerceptron
```


- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—Perceptron model is tested here.
 - Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.544 FRAMEWORK ROM SKLEARN.LINEARRIDGER

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearRidgeR.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearRidgeR
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearRidgeR
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—Ridge model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 2. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.545 FRAMEWORK ROM SKLEARN.LINEARRIDGERCV

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearRidgeRCV.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearRidgeRCV
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearRidgeRCV
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—RidgeCV model is tested here.
 - Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-07-13
 - description: removed renormalization
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: other test updates
 3. revision info:
 - author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.546 FRAMEWORK ROM SKLEARN.LINEARPAR

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearPAR.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearPAR
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearPAR
```

- Test Description:

- An example exercising supervised sklearn methods, specifically the linear_model—PassiveAggressive model is tested here.

Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).

- Original Author:

- maljdan

- Creation date:

- 2016-04-28

- The classes tested in this test are:

- SupervisedLearning.SciKitLearn

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : maljdan
- date : 2016-05-02
- description: Adding a fixed random_state value to a few of the ROM tests to ensure reproducibility.

2. revision info:

- author : talbpaul
- date : 2016-09-15
- description: other test updates

3. revision info:

- author : maljdan
- date : 2017-01-19
- description: Adding this test description.

2.3.547 FRAMEWORK ROM SKLEARN.LINEARSGDR

This test can be found at “./raven/tests/framework/ROM/SKLearn/linearSGDR.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.linearSGDR
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.linearSGDR
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the linear_model—SGDRegressor model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - maljdan
- Creation date:
 - 2016-04-28
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-05-02
 - description: Adding a fixed random_state value to a few of the ROM tests to ensure reproducibility.
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15

- description: other test updates
3. revision info:
- author : maljdan
 - date : 2017-01-19
 - description: Adding this test description.

2.3.548 FRAMEWORK ROM SKLEARN.NEURAL NETWORK

This test can be found at “./raven/tests/framework/ROM/SKLearn/mlpRegressor.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/SKLearn.neural_network
```

or

```
./run_framework_tests --re=framework/ROM/SKLearn.neural_network
```

- Test Description:
 - An example exercising supervised sklearn methods, specifically the neural_network—MLPRegressor model is tested here.
Note, all of the tests in SKLearn operate on a 2D input domain with the goal of fitting a paraboloid function. The input dimensions are of largely different scales and one dimension is off-centered from the origin to ensure that normalization is being handled correctly. Classifiers will use this same function to determine if a point is above 0.25, and multitask methods will additionally fit an additive model (x+y).
- Original Author:
 - wangc
- Creation date:
 - 2017-10-25
- The classes tested in this test are:
 - SupervisedLearning.SciKitLearn

2.3.549 FRAMEWORK ROM TENSORSPLINE.GRIDSPLINE

This test can be found at “./raven/tests/framework/ROM/TensorSpline/tensor_spline_grid.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TensorSpline.GridSpline
```

or

```
./run_framework_tests --re=framework/ROM/TensorSpline.GridSpline
```

- Test Description:
 - This case is aimed to test the functionalities of the Tensor Spline Surrogate Model. It trains the Tensor Spline on a grid generated sampling the “projectile” model and inquires it on a refined Grid.
- Original Author:
 - alfoa
- Creation date:
 - 2018-04-12
- The classes tested in this test are:
 - SupervisedLearning.NDSpline
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-04-12
 - description: Created test and added description

2.3.550 FRAMEWORK ROM TENSORSPLINE.NOGRIDSPLINE

This test can be found at “./raven/tests/framework/ROM/TensorSpline/tensor_spline_no_grid_mc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/ROM/TensorSpline.NoGridSpline
```

or

```
./run_framework_tests --re=framework/ROM/TensorSpline.NoGridSpline
```

- Test Description:
 - This case is aimed to test the functionalities of the Tensor Spline Surrogate Model. It trains the Tensor Spline on a MC generated sampling the “projectile” model and inquires it on a Grid. This tests the capability to accept not cartesian grids as training sets. It is important to notice that this tests demonstrates that the mechanics work but does not suggest to train the NDSpline ROM on not a cartesian grid.
- Original Author:
 - alfoa
- Creation date:
 - 2018-04-12
- The classes tested in this test are:
 - SupervisedLearning.NDSpline
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-04-12
 - description: Created test and added description

2.3.551 FRAMEWORK SAMPLERS ROM SOBOL STATICSOBOLROMSMOLYAK

This test can be found at “./raven/tests/framework/ROM/Sobol/test_sobol_rom.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/Sobol/staticSobolRomSmolyak
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/Sobol/staticSobolRomSmolyak
```

- Test Description:

- This test checks the operation of the sampler and ROM together.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-03-03
- The classes tested in this test are:
 - Samplers.Sobol,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-12-20
 - description: moved ROM metadata writing from direct-to-file to direct-to-dataobject

2.3.552 FRAMEWORK SAMPLERS ROM SOBOL STATICSOBOLROMSMOLYAK

This test can be found at “./raven/tests/framework/ROM/Sobol/test_sobol_tensor.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/Sobol/staticSobolRomSmolyak
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/Sobol/staticSobolRomSmolyak
```

- Test Description:
 - This test checks the operation of the sampler and model, using the tensor sparse grid.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:

- Samplers.Sobol,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-12-20
 - description: moved ROM metadata writing from direct-to-file to direct-to-dataobject

2.3.553 FRAMEWORK SAMPLERS ROM SOBOL ADAPTIVESOBOLMAXRUNS

This test can be found at “./raven/tests/framework/ROM/Sobol/test_adapt_sobol_maxruns.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/Sobol/AdaptiveSobolMaxRuns
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/Sobol/AdaptiveSobolMaxRuns
```

- Test Description:
 - This tests using the AdaptiveSobol sampler to construct HDMRRom ROMs, but restricted by a specified number of samples (maxRuns in the sampler).
- Original Author:
 - talbpaul
- Creation date:
 - 2016-02-08
- The classes tested in this test are:
 - Samplers.AdaptiveSobol,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-12-20
 - description: moved ROM metadata writing from direct-to-file to direct-to-dataobject

2.3.554 FRAMEWORK SAMPLERS ROM SOBOL ADAPTIVESOBOLPARALLEL

This test can be found at “./raven/tests/framework/ROM/Sobol/test_adapt_sobol_parallel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/Sobol/AdaptiveSobolParallel
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/Sobol/AdaptiveSobolParallel
```

- Test Description:
 - This tests using the AdaptiveSobol sampler to construct HDMRRom ROMs, in parallel.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-02-08
- The classes tested in this test are:
 - Samplers.AdaptiveSobol,SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-12-20
 - description: moved ROM metadata writing from direct-to-file to direct-to-dataobject

2.3.555 FRAMEWORK SAMPLERS ROM SOBOL TIMEDEPENDENT

This test can be found at “./raven/tests/framework/ROM/Sobol/test_time_dep_sobol.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/ROM/Sobol/TimeDependent
```

or

```
./run_framework_tests --re=framework/Samplers/ROM/Sobol/TimeDependent
```

- Test Description:
 - This test checks the construction of a time-dependent HDMRRom.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-03-09
- The classes tested in this test are:
 - SupervisedLearning.HDMRRom
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-08-09
 - description: Add pivotParameter for time dependent ROM
 2. revision info:
 - author : talbpaul
 - date : 2018-12-20
 - description: moved ROM metadata writing from direct-to-file to direct-to-dataobject

2.3.556 FRAMEWORK HYBRIDMODEL.HYBRIDMODEL

This test can be found at “./raven/tests/framework/hybridModel/test_hybrid_model.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/hybridModel.hybridModel
```

or

```
./run_framework_tests --re=framework/hybridModel.hybridModel
```

- Test Description:
 - Example of usage of the Hybrid Model capability in RAVEN This test is intended to check the functionality of Hybrid Model.

- Original Author:
 - wangc
- Creation date:
 - 2017-09-13
- The classes tested in this test are:
 - Models.HybridModel, Models.ExternalModel, Models.ROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-07-09
 - description: Move cross validation assemble from HybridModel to ROM

2.3.557 FRAMEWORK HYBRIDMODEL.ROMTRAIN

This test can be found at “./raven/tests/framework/hybridModel/test_train_rom.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/hybridModel.romTrain
```

or

```
./run_framework_tests --re=framework/hybridModel.romTrain
```

- Test Description:
 - This test is intended to check the rom train capability of the Hybrid Model.
- Original Author:
 - wangc
- Creation date:
 - 2017-09-20
- The classes tested in this test are:
 - Models.HybridModel, Models.ExternalModel, Models.ROM

- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-07-09
 - description: Move cross validation assemble from HybridModel to ROM

2.3.558 FRAMEWORK HYBRIDMODEL.RUNCODE

This test can be found at “./raven/tests/framework/hybridModel/test_code.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/hybridModel.runCode
```

or

```
./run_framework_tests --re=framework/hybridModel.runCode
```

- Test Description:
 - This test is aimed to test the HybridModel system with the generic code system.
- Original Author:
 - wangc
- Creation date:
 - 2017-09-21
- The classes tested in this test are:
 - Models.HybridModel, Models.Code.GenericCode
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2019-07-09
 - description: Move cross validation assemble from HybridModel to ROM

2.3.559 FRAMEWORK HYBRIDMODEL.ROM ROM

This test can be found at “./raven/tests/framework/hybridModel/test_rom_rom.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/hybridModel.rom_rom
```

or

```
./run_framework_tests --re=framework/hybridModel.rom_rom
```

- Test Description:
 - Example of usage of the Hybrid Model capability in RAVEN This test is intended to check the functionality of Hybrid Model. Use ROM to train ROM
- Original Author:
 - wangc
- Creation date:
 - 2017-09-13
- The classes tested in this test are:
 - Models.HybridModel, Models.ROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-12-20
 - description: replaced median absolute error with average absolute error score
 2. revision info:
 - author : wangc
 - date : 2019-07-09
 - description: Move cross validation assemble from HybridModel to ROM

2.3.560 FRAMEWORK HYBRIDMODEL.LOGICALMODEL

This test can be found at “./raven/tests/framework/hybridModel/test_logical_model.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/hybridModel.logicalModel
```

or

```
./run_framework_tests --re=framework/hybridModel.logicalModel
```

- Test Description:
 - Example of usage of the Logical Model capability in RAVEN This test is intended to check the functionality of Logical Model with three external models ”sum”, ”minus” and ”multiply”. A control function ”control” is required to select the external model to run based on the values of input variables x and y. If $x > 0$ and $y > 1$, the model ”sum” will be selected. if $x > 0$ and y is less than or equal 1, the model ”multiply” will be selected. In other conditions, the model ”minus” will be selected.
- Original Author:
 - wangc
- Creation date:
 - 2020-03-31
- The classes tested in this test are:
 - Models.LogicalModel

2.3.561 FRAMEWORK HYBRIDMODEL.LOGICALCODE

This test can be found at “./raven/tests/framework/hybridModel/test_logical_code.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/hybridModel.logicalCode
```

or

```
./run_framework_tests --re=framework/hybridModel.logicalCode
```


- Test Description:
 - Example of usage of the Logical Model capability in RAVEN This test is intended to check the functionality of Logical Model with the generic code system. Two simple python codes are used in this test. One is an exponential function of input variables x and y, the other one is a polynomial function of input variables x and y. A control function "control" utilizes the input values of x and y to determine which code to run. If $x \leq 0.5$ and $y \leq 1.5$, the polynomial model 'poly' will be executed, otherwise the exponential model 'exp' will be executed.
- Original Author:
 - wangc
- Creation date:
 - 2020-05-07
- The classes tested in this test are:
 - Models.LogicalModel

2.3.562 FRAMEWORK HYBRIDMODEL.LOGICALROM

This test can be found at `./raven/tests/framework/hybridModel/test_logical_rom.xml`. This test can be called executing the following command:

```
./run_tests --re=framework/hybridModel.logicalRom
```

or

```
./run_framework_tests --re=framework/hybridModel.logicalRom
```

- Test Description:
 - Example of usage of the Logical Model capability in RAVEN This test is intended to check the functionality of Logical Model with ROMs. A control function "control" is required to select the right model to run based on the values of input variables leftTemperature and rightTemperatureDist. If leftTemperature in (860,1340) and rightTemperatureDist in (740, 1460), the ROM "svr" will be selected, else the model "thermalConductivityComputation" will be selected.
- Original Author:

- wangc
- Creation date:
 - 2020-05-11
- The classes tested in this test are:
 - Models.LogicalModel

2.3.563 FRAMEWORK PCASAMPLER PCAINDEX

This test can be found at “./raven/tests/framework/pcaSampler/test_pca_index.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pcaSampler/pcaIndex
```

or

```
./run_framework_tests --re=framework/pcaSampler/pcaIndex
```

- Test Description:
 - Tests use of the PCA method to sample in surrogate input space.
- Original Author:
 - wangc
- Creation date:
 - 2016-02-16
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers

2.3.564 FRAMEWORK PCASAMPLER MULTIPCA

This test can be found at “./raven/tests/framework/pcaSampler/test_multi_pca.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pcaSampler/multiPCA
```

or

```
./run_framework_tests --re=framework/pcaSampler/multiPCA
```

- Test Description:
 - Tests use of multiple PCA surrogates in one sampling scheme.
- Original Author:
 - wangc
- Creation date:
 - 2016-02-16
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers.MonteCarlo

2.3.565 FRAMEWORK PCASAMPLER GRIDPCA

This test can be found at “./raven/tests/framework/pcaSampler/test_pca_index_grid.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pcaSampler/gridPCA
```

or

```
./run_framework_tests --re=framework/pcaSampler/gridPCA
```

- Test Description:
 - Tests use of the PCA method to sample in gridded surrogate input space.
- Original Author:
 - wangc
- Creation date:
 - 2016-02-16
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers.Grid

2.3.566 FRAMEWORK SAMPLERS.DATAOBJECTCONSTANTS

This test can be found at “./raven/tests/framework/Samplers/dataobject_constants.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers.DataObjectConstants
```

or

```
./run_framework_tests --re=framework/Samplers.DataObjectConstants
```

- Test Description:
 - Tests using a DataObject external to a Step as a source of constants for a Sampler. The models are very simple, so to regold, assure the correct values pass through for the constants and final result is obtained according to the models.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-11-14
- The classes tested in this test are:
 - Sampler

2.3.567 FRAMEWORK SAMPLERS ENSEMBLED SAMPLER.ENSEMBLESAMPLERDUMMY

This test can be found at “./raven/tests/framework/Samplers/EnsembledSampler/test_EnsembledSamplerDummy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/EnsembledSampler.EnsembledSamplerDummy
```

or

```
./run_framework_tests --re=framework/Samplers/EnsembledSampler.EnsembledSampler
```

- Test Description:

- An example of using the EnsembleForward sampler aimed to combine multiple forward sampling techniques (MonteCarlo, Grid, Stratified, etc.). This test uses a Dummy Model in order to check that the sampled values are correctly passed to the Model entity.
- Original Author:
 - alfoa
- Creation date:
 - 2016-04-20
- The classes tested in this test are:
 - Samplers.EnsembleForward, Models.Dummy
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-04-20
 - description: Finalized EnsembleSampler
 2. revision info:
 - author : alfoa
 - date : 2016-05-25
 - description: Finalized merge request. Closes #559
 3. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 4. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 5. revision info:
 - author : talbpaul
 - date : 2017-09-27
 - description: Added seed to samplerInit for testing
 6. revision info:
 - author : talbpaul
 - date : 2018-01-02
 - description: added input data object to prevent same-input-as-output error

2.3.568 FRAMEWORK SAMPLERS ENSEMBLEDSAMPLER.ENSEMBLESAMPLEREXTMODEL

This test can be found at “./raven/tests/framework/Samplers/EnsembledSampler/test_EnsembleSamplerExtModel.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/EnsembledSampler.EnsembleSamplerExtModel
```

or

```
./run_framework_tests --re=framework/Samplers/EnsembledSampler.EnsembleSampler
```

- Test Description:
 - An example of using the EnsembleForward sampler aimed to combine multiple forward sampling techniques (MonteCarlo, Grid, Stratified, etc.). This test uses an ExternalModel in order to testify that this sampling strategy can work with RAVEN internal developed Models.
- Original Author:
 - alfoa
- Creation date:
 - 2016-04-20
- The classes tested in this test are:
 - Samplers.EnsembleForward, Models.ExternalModel
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-04-20
 - description: Finalized EnsembleForward Sampler
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.569 FRAMEWORK SAMPLERS ENSEMBLEDSAMPLER.ENSEMBLESAMPLERDUMMY

This test can be found at “./raven/tests/framework/Samplers/EnsembledSampler/test_EnsembleSamplerFunctions.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/EnsembledSampler.EnsembleSamplerDummy
```

or

```
./run_framework_tests --re=framework/Samplers/EnsembledSampler.EnsembleSam
```

- Test Description:
 - This test uses a Dummy Model in order to check that the values generated by functions in the ensemble sampler are correctly passed to the Model entity.
- Original Author:
 - mandd
- Creation date:
 - 2017-05-25
- The classes tested in this test are:
 - Samplers.EnsembleForward, Models.Dummy
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-01-02
 - description: added input data object to prevent same-input-as-output error
 2. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.570 FRAMEWORK SAMPLERS ENSEMBLEDSAMPLER.ENSEMBLESAMPLERCONSTANTS

This test can be found at “./raven/tests/framework/Samplers/EnsembledSampler/test_EnsembleSamplerConstants.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/EnsembledSampler.EnsembleSamplerConsta
```

or

```
./run_framework_tests --re=framework/Samplers/EnsembledSampler.EnsembleSam
```

- Test Description:
 - Tests the use of constants in the EnsembleForward sampler.
- Original Author:
 - talbpaul
- Creation date:
 - 2017-08-30
- The classes tested in this test are:
 - Samplers.EnsembleForward
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2018-01-02
 - description: added input data object to prevent same-input-as-output error

2.3.571 FRAMEWORK SAMPLERS VECTORSAMPLES MC

This test can be found at “./raven/tests/framework/Samplers/VectorSamples/mc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/VectorSamples/MC
```

or


```
./run_framework_tests --re=framework/Samplers/VectorSamples/MC
```

- Test Description:
 - Tests sampling a vector variable.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-03-21
- The classes tested in this test are:
 - Samplers.MonteCarlo

2.3.572 FRAMEWORK SAMPLERS ADAPTIVEBATCH.GREEDYDISTANCE

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_greedy_d.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.GreedyDistance
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.GreedyDistance
```

- Test Description:
 - An example of using the limit surface post-processor using the greedy selection algorithm with the distance scoring function. That is, the point to be selected will be furthest from all existing points that have been or are being evaluated. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).
- Original Author:
 - maljdan
- Creation date:

- 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 4. revision info:
 - author : maljdan
 - date : 2017-01-18
 - description: Adding test description.
 5. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.573 FRAMEWORK SAMPLERS ADAPTIVEBATCH.GREEDYDISTANCEPERSISTENCE

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_greedy_dp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.GreedyDistancePersistence
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.GreedyDistance
```

- Test Description:
 - An example of using the limit surface post-processor using the greedy selection algorithm with the distance+persistence scoring function. That is, the point to be selected will be a combination of distance from other points and it will have low persistence, that is to say that its label has changed frequently indicating it is in an uncertain area. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).
- Original Author:
 - maljdan
- Creation date:
 - 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 4. revision info:
 - author : maljdan

- date : 2017-01-18
- description: Adding test description.

5. revision info:

- author : alfoa
- date : 2019-03-07
- description: Modified syntax in Functions as for issue #934

2.3.574 FRAMEWORK SAMPLERS ADAPTIVEBATCH.MAXPDISTANCE

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_maxp_d.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.MaxPDistance
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.MaxPDistance
```

- Test Description:
 - An example of using the limit surface post-processor with a maximum persistence batch selection algorithm with the distance scoring function. That is, the points to be selected will be topologically distinct maxima in terms of distance from already sampled points. This differs from the maximum value maxima as this looks at points with the highest topological persistence. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).
- Original Author:
 - maljdan
- Creation date:
 - 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
2. revision info:
- author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
3. revision info:
- author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
4. revision info:
- author : maljdan
 - date : 2017-01-18
 - description: Adding test description.
5. revision info:
- author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.575 FRAMEWORK SAMPLERS ADAPTIVEBATCH.MAXPDISTANCEPERSISTENCE

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_maxp_dp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.MaxPDistancePersistence
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.MaxPDistancePersistence
```

- Test Description:

- An example of using the limit surface post-processor with a maximum persistence batch selection algorithm with the distance+persistence scoring function. That is, the points to be selected will be topologically distinct maxima in terms of a combination of

distance from already sampled points and also the temporal inconsistency of the label for this point (points with more volatility are preferred). This differs from the maximum value maxima as this looks at points with the highest topological persistence. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).

- Original Author:
 - maljdan
- Creation date:
 - 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 4. revision info:
 - author : maljdan
 - date : 2017-01-18
 - description: Adding test description.
 5. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.576 FRAMEWORK SAMPLERS ADAPTIVEBATCH.MAXVDISTANCE

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_maxv_d.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.MaxVDistance
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.MaxVDistance
```

- Test Description:
 - An example of using the limit surface post-processor with a maximum value batch selection algorithm with the distance scoring function. That is, the points to be selected will be topologically distinct maxima in terms of distance from already sampled points. This differs from the maximum persistence maxima as this looks at distinct local maxima with the highest value. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).
- Original Author:
 - maljdan
- Creation date:
 - 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08

- description: First update, looking for more failing tests to add.
- 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
- 4. revision info:
 - author : maljdan
 - date : 2017-01-18
 - description: Adding test description.
- 5. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.577 FRAMEWORK SAMPLERS ADAPTIVEBATCH.MAXVDISTANCE

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_maxv_dp.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.MaxVDistance
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.MaxVDistance
```

- Test Description:
 - An example of using the limit surface post-processor with a maximum value batch selection algorithm with the distance+persistence scoring function. That is, the points to be selected will be topologically distinct maxima in terms of a combination of distance from already sampled points and also the temporal inconsistency of the label for this point (points with more volatility are preferred). This differs from the maximum persistence maxima as this looks at distinct local maxima with the highest value. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).
- Original Author:
 - maljdan

- Creation date:
 - 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 4. revision info:
 - author : maljdan
 - date : 2017-01-18
 - description: Adding test description.
 5. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.578 FRAMEWORK SAMPLERS ADAPTIVEBATCH.PRERANKINGSIMPLIFICATION

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_pre.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.PreRankingSimplification
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.PreRankingSimp
```

- Test Description:
 - A copy of framework/Samplers/AdaptiveBatch.MaxPDistance (test_maxp_d.xml) except it has been modified to provide a simplification value which is used to set a level for persistence simplification before extracting local maximum from either the maxP or maxV batch strategies. In this example, the value is 0.5, so any persistence value less than 0.5 of the scoring function's range of values is removed and thus we may end up with very few local maxima candidates. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).
- Original Author:
 - maljdan
- Creation date:
 - 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.

4. revision info:

- author : maljdan
- date : 2017-01-18
- description: Adding test description.

5. revision info:

- author : alfoa
- date : 2019-03-07
- description: Modified syntax in Functions as for issue #934

2.3.579 FRAMEWORK SAMPLERS ADAPTIVEBATCH.POSTRANKINGTHRESHOLDING

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_post.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.PostRankingThresholding
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.PostRankingThre
```

- Test Description:

- A copy of framework/Samplers/AdaptiveBatch.MaxPDistance (test_maxp_d.xml) except it has been modified to provide a threshold value which is used to reject samples whose score is less than a given percentage of the scoring range. Thus, if the threshold is .75 and the scores range from 0-10, then any score less than 7.5 will be rejected. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).

- Original Author:

- maljdan

- Creation date:

- 2015-11-03

- The classes tested in this test are:

- Samplers.LimitSurfaceSearch

- Since the creation of this test, the following main revisions have been performed:

1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
4. revision info:
 - author : maljdan
 - date : 2017-01-18
 - description: Adding test description.
5. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.580 FRAMEWORK SAMPLERS ADAPTIVEBATCH.THICKENEDBAND

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_thick.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.ThickenedBand
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.ThickenedBand
```

- Test Description:

- A copy of framework/Samplers/AdaptiveBatch.MaxPDistance (test_maxp_d.xml) except it has been modified to provide a thickened band of candidates for scoring rather than only the points that lie on the limit surface of the current reduced order model representing the data. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).
- Original Author:
 - maljdan
- Creation date:
 - 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 4. revision info:
 - author : maljdan
 - date : 2017-01-18
 - description: Adding test description.
 5. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.581 FRAMEWORK SAMPLERS ADAPTIVEBATCH.INVALIDPRERANKINGSIMPLIFICATION

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_invalid_pre.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.InvalidPreRankingSimplification
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.InvalidPreRankingSimplification
```

- Test Description:
 - An example of using the limit surface post-processor with an invalid simplification value. This should degrade gracefully by defaulting to a simplification of 0 and warning the user of the change made to the execution. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).
- Original Author:
 - maljdan
- Creation date:
 - 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
 3. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

4. revision info:

- author : maljdan
- date : 2017-01-18
- description: Adding test description.

5. revision info:

- author : alfoa
- date : 2019-03-07
- description: Modified syntax in Functions as for issue #934

2.3.582 FRAMEWORK SAMPLERS ADAPTIVEBATCH.INVALIDPOSTRANKINGSIMPLIFICATION

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_invalid_post.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.InvalidPostRankingSimpli
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.InvalidPostRan
```

- Test Description:
 - An example of using the limit surface post-processor with an invalid threshold value. This should degrade gracefully by defaulting to a threshold of 0 and warning the user of the change made to the execution. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).
- Original Author:
 - maljdan
- Creation date:
 - 2015-11-03
- The classes tested in this test are:

- Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 4. revision info:
 - author : maljdan
 - date : 2017-01-18
 - description: Adding test description.
 5. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.583 FRAMEWORK SAMPLERS ADAPTIVEBATCH.INVALIDMAXBATCHSIZE

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_invalid_mbs.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.InvalidMaxBatchSize
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.InvalidMaxBatch
```

- Test Description:

- An example of using the limit surface post-processor with an invalid maximum batch size. This should degrade gracefully by defaulting to a maximum batch size of 1 and warning the user of the change made to the execution. Note, all of the tests in Adaptive-Batch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).
- Original Author:
 - maljdan
- Creation date:
 - 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
 3. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 4. revision info:
 - author : maljdan
 - date : 2017-01-18
 - description: Adding test description.
 5. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.584 FRAMEWORK SAMPLERS ADAPTIVEBATCH.INVALIDSCORINGSTRATEGY

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_invalid_score.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.InvalidScoringStrategy
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.InvalidScoring
```

- Test Description:
 - An example of using the limit surface post-processor with an invalid scoring strategy. This should print a message and exit. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).
- Original Author:
 - maljdan
- Creation date:
 - 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
 3. revision info:

- author : maljdan
- date : 2016-04-06
- description: Updating test cases to reflect the changes to the user input.

4. revision info:

- author : maljdan
- date : 2017-01-18
- description: Adding test description.

5. revision info:

- author : alfoa
- date : 2019-03-07
- description: Modified syntax in Functions as for issue #934

2.3.585 FRAMEWORK SAMPLERS ADAPTIVEBATCH.INVALIDBATCHSTRATEGY

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_invalid_batch.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.InvalidBatchStrategy
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.InvalidBatchSt
```

- Test Description:
 - An example of using the limit surface post-processor with an invalid batch strategy which will fail with an error message. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).
- Original Author:
 - maljdan
- Creation date:
 - 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch

- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
 3. revision info:
 - author : maljdan
 - date : 2017-01-18
 - description: Adding test description.
 4. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.586 FRAMEWORK SAMPLERS ADAPTIVEBATCH.INVALIDPOSTRANKINGSIMPLIFICATION

This test can be found at “./raven/tests/framework/Samplers/AdaptiveBatch/test_invalid_thick.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveBatch.InvalidPostRankingSimpli
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveBatch.InvalidPostRan
```

- Test Description:
 - An example of using the limit surface post-processor with an invalid threshold value. This should degrade gracefully by defaulting to a threshold of 0 and warning the user of the change made to the execution. Note, all of the tests in AdaptiveBatch operate on a 2D input domain with the goal of extracting a circular limit surface with radius 0.5 and centered at the origin, (0,0).

- Original Author:
 - maljdan
- Creation date:
 - 2015-11-03
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2015-11-20
 - description: Collapsing the batch sampling into the limit surface class, updating documentation, XSD, and the test cases to reflect this change.
 2. revision info:
 - author : maljdan
 - date : 2015-11-23
 - description: Adjusting the invalid thickness example to replicate the default distancePersistence scoring function rather than the distance scoring function (which fails on the HPC for some yet undiscovered reason).
 3. revision info:
 - author : talbpaul
 - date : 2016-02-08
 - description: First update, looking for more failing tests to add.
 4. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 5. revision info:
 - author : maljdan
 - date : 2017-01-18
 - description: Adding test description.
 6. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.587 FRAMEWORK SAMPLERS NOVARS.MC

This test can be found at “./raven/tests/framework/Samplers/NoVars/mc.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/NoVars.MC
```

or

```
./run_framework_tests --re=framework/Samplers/NoVars.MC
```

- Test Description:
 - Tests using no variables as inputs to the MonteCarlo sampler. While not precisely analytic, the samples pointset should contain two realizations, each with values 1, 2, 3 for x1, x2, and x3.
- Original Author:
 - talbpaul
- Creation date:
 - 2019-11-05
- The classes tested in this test are:
 - Samplers.MonteCarlo

2.3.588 FRAMEWORK SAMPLERS NOVARS.GRID

This test can be found at “./raven/tests/framework/Samplers/NoVars/grid.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/NoVars.Grid
```

or

```
./run_framework_tests --re=framework/Samplers/NoVars.Grid
```

- Test Description:

- Tests using no variables as inputs to the Grid sampler. While not precisely analytic, the samples pointset should contain one realization, with values 1, 2, 3 for x1, x2, and x3.
- Original Author:
 - talbpaul
- Creation date:
 - 2019-11-05
- The classes tested in this test are:
 - Samplers.Grid

2.3.589 FRAMEWORK SAMPLERS NOVARS.STRATIFIED

This test can be found at “./raven/tests/framework/Samplers/NoVars/stratified.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/NoVars.Stratified
```

or

```
./run_framework_tests --re=framework/Samplers/NoVars.Stratified
```

- Test Description:
 - Tests using no variables as inputs to the Stratified sampler. While not precisely analytic, the samples pointset should contain one realization, with values 1, 2, 3 for x1, x2, and x3.
- Original Author:
 - talbpaul
- Creation date:
 - 2019-11-05
- The classes tested in this test are:
 - Samplers.Stratified

2.3.590 FRAMEWORK SAMPLERS RESTART.AMC

This test can be found at “./raven/tests/framework/Samplers/Restart/adaptive_mc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/Restart.AMC
```

or

```
./run_framework_tests --re=framework/Samplers/Restart.AMC
```

- Test Description:
 - Tests restarting an Adaptive Monte Carlo sampling from restart. `makeCoarse` samples initial data, then `makeRestart` makes additional samples, restarting from the first set of samples. `makeFine` does all the samples without restart for comparison. The model for `coarse` always returns a value of 1, while the model for `restart` returns a value of 2, so you can tell which samples came from which sampling strategy. Further, the solution export for the restart should contain all the sample points, not merely the newly-sampled points.
- Original Author:
 - talbpaul
- Creation date:
 - 2020-07-16
- The classes tested in this test are:
 - `Samplers.AdaptiveMonteCarlo`

2.3.591 FRAMEWORK SAMPLERS RESTART.STOCHPOLY

This test can be found at “./raven/tests/framework/Samplers/Restart/test_restart_stochpoly.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/Restart.StochPoly
```

or

```
./run_framework_tests --re=framework/Samplers/Restart.StochPoly
```


- Test Description:
 - The essence of this test is to demonstrate the input space when generated from restart or from scratch are identical. The external models are organized so that outputs from the restart data have an output value of 1.0, and from the higher-fidelity sampler have an output value of 2.0. Obviously using different models with restarts is a terrible idea in general, but makes this test work. In the end, "fine.csv" and "restart.csv" should have identical input space, but different output space; all the output of "fine.csv" should be 2.0, while the restarted points in "restart.csv" should be 1.0
- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:
 - Samplers.SparseGridCollocation

2.3.592 FRAMEWORK SAMPLERS RESTART.SOBOL

This test can be found at `./raven/tests/framework/Samplers/Restart/test_restart_sobol.xml`. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/Restart.Sobol
```

or

```
./run_framework_tests --re=framework/Samplers/Restart.Sobol
```

- Test Description:
 - The essence of this test is to demonstrate the input space when generated from restart or from scratch are identical. The external models are organized so that outputs from the restart data have an output value of 1.0, and from the higher-fidelity sampler have an output value of 2.0. Obviously using different models with restarts is a terrible idea in general, but makes this test work. In the end, "fine.csv" and "restart.csv" should have identical input space, but different output space; all the output of "fine.csv" should be 2.0, while the restarted points in "restart.csv" should be 1.0
- Original Author:

- talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:
 - Samplers.Sobol

2.3.593 FRAMEWORK SAMPLERS RESTART.GRID

This test can be found at “./raven/tests/framework/Samplers/Restart/test_restart_Grid.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/Restart.Grid
```

or

```
./run_framework_tests --re=framework/Samplers/Restart.Grid
```

- Test Description:
 - The essence of this test is to demonstrate the input space when generated from restart or from scratch are identical. The external models are organized so that outputs from the restart data have an output value of 1.0, and from the higher-fidelity sampler have an output value of 2.0. Obviously using different models with restarts is a terrible idea in general, but makes this test work. In the end, "fine.csv" and "restart.csv" should have identical input space, but different output space; all the output of "fine.csv" should be 2.0, while the restarted points in "restart.csv" should be 1.0
- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:
 - Samplers.Grid

2.3.594 FRAMEWORK SAMPLERS RESTART.LOADFROMLARGECSV

This test can be found at “./raven/tests/framework/Samplers/Restart/large_load_from_csv.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/Restart.LoadFromLargeCSV
```

or

```
./run_framework_tests --re=framework/Samplers/Restart.LoadFromLargeCSV
```

- Test Description:
 - At one point there was performance issues restarting from a large amount of data that is loaded from a CSV. This test exists to ensure loading from a large CSV behaves consistently.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-06-30
- The classes tested in this test are:
 - Samplers.Grid

2.3.595 FRAMEWORK SAMPLERS CATEGORICAL.STRINGS

This test can be found at “./raven/tests/framework/Samplers/Categorical/string_vars.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/Categorical.Strings
```

or

```
./run_framework_tests --re=framework/Samplers/Categorical.Strings
```

- Test Description:

- Tests the ability to use the Categorical distribution along with Functions to essentially sample strings for variables. The model run is a simple projectile motion problem that can be run in either “stepper”; or “analytic” mode. The output of the model is “height”; as a time-dependent variable. The analytic mode is exact, but the stepper mode is intentionally chosen to be a poor approximation (too few steps taken).
- Original Author:
 - talbpaul
- Creation date:
 - 2018-01-31
- The classes tested in this test are:
 - Samplers.Categorical,Function
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.596 FRAMEWORK SAMPLERS CATEGORICAL.RESTART

This test can be found at “./raven/tests/framework/Samplers/Categorical/string_vars_restart.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/Categorical.Restart
```

or

```
./run_framework_tests --re=framework/Samplers/Categorical.Restart
```

- Test Description:
 - Tests restarting from input spaces with string variables (from categorical+function) as well as restarting a HistorySet. The difference between input and output spaces is in the output variable “restartID”. In the data being restarted from, the value is 1.0, while in the new samples taken, the value is 2.0. The restart history CSVs that should have a “1.0” restart ID are 0,2,6,8,9,11,15,17,18,20,24,26 The restart history CSVs that should have a “2.0” restart ID are 1,3,4,5,7,10,12,13,14,16,19,21,22,23,25

- Original Author:
 - talbpaul
- Creation date:
 - 2018-01-31
- The classes tested in this test are:
 - Samplers.Categorical,Function
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.597 FRAMEWORK SAMPLERS CATEGORICAL.RESTARTMISSINGVARS

This test can be found at “./raven/tests/framework/Samplers/Categorical/missing_variables.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/Categorical.RestartMissingVars
```

or

```
./run_framework_tests --re=framework/Samplers/Categorical.RestartMissingVars
```

- Test Description:
 - Tests restarting from input spaces with string variables (from categorical+function) but with variables missing from the restart (should fail). The difference between input and output spaces is in the output variable “restartID”. In the data being restarted from, the value is 1.0, while in the new samples taken, the value is 2.0. The restart history CSVs that should have a “1.0”; restart ID are 0,2,6,8,9,11,15,17,18,20,24,26 The restart history CSVs that should have a “2.0”; restart ID are 1,3,4,5,7,10,12,13,14,16,19,21,22,23,25
- Original Author:
 - talbpaul
- Creation date:

- 2018-03-14
- The classes tested in this test are:
 - Samplers.Categorical,Function
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.598 FRAMEWORK SAMPLERS CUSTOMSAMPLER.CUSTOMSAMPLERFROMFILE

This test can be found at “./raven/tests/framework/Samplers/CustomSampler/test_Custom_Sampler_File.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/CustomSampler.customSamplerFromFile
```

or

```
./run_framework_tests --re=framework/Samplers/CustomSampler.customSamplerF
```

- Test Description:
 - An example of using the Custom Sampler object. In this test the realization coordinates are collected from a Files object of type CSV.
- Original Author:
 - alfoa
- Creation date:
 - 2016-05-24
- The classes tested in this test are:
 - Samplers.CustomSampler, Files.Input
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : alfoa
 - date : 2016-05-25
 - description: Fixed absolute path
2. revision info:
- author : talbpaul
 - date : 2016-09-15
 - description: Test updates
3. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
4. revision info:
- author : talbpaul
 - date : 2018-05-02
 - description: Added nameInSource test to get "x" from "xalias"

2.3.599 FRAMEWORK SAMPLERS CUSTOMSAMPLER.CUSTOMSAMPLERFROMDATAOBJECT

This test can be found at “./raven/tests/framework/Samplers/CustomSampler/test_Custom_Sampler_DataObject.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/CustomSampler.customSamplerFromDataObject
```

or

```
./run_framework_tests --re=framework/Samplers/CustomSampler.customSamplerFromDataObject
```

- Test Description:
 - An example of using the Custom Sampler object. In this test the realization coordinates are directly taken from a DataObject of type PointSet
- Original Author:
 - alfoa
- Creation date:
 - 2016-05-25

- The classes tested in this test are:
 - Samplers.CustomSampler, DataObjects.PointSet
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-05-25
 - description: Fixed absolute path
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 4. revision info:
 - author : talbpaul
 - date : 2018-05-02
 - description: Added nameInSource test renaming "x" to "xnew"

2.3.600 FRAMEWORK SAMPLERS CUSTOMSAMPLER.CUSTOMSAMPLERFROMDATAOBJECT

This test can be found at “./raven/tests/framework/Samplers/CustomSampler/from_dataset.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/CustomSampler.customSamplerFromDataObj
```

or

```
./run_framework_tests --re=framework/Samplers/CustomSampler.customSamplerF
```

- Test Description:
 - An example of using the Custom Sampler object. In this test the realization coordinates are directly taken from a DataObjec of type PointSet

- Original Author:
 - alfoa
- Creation date:
 - 2016-05-25
- The classes tested in this test are:
 - Samplers.CustomSampler, DataObjects.PointSet
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-05-25
 - description: Fixed absolute path
 2. revision info:
 - author : talbpaul
 - date : 2016-09-15
 - description: Test updates
 3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
 4. revision info:
 - author : talbpaul
 - date : 2020-01-07
 - description: Adding a constant

2.3.601 FRAMEWORK SAMPLERS CUSTOMSAMPLER.BYINDEX

This test can be found at “./raven/tests/framework/Samplers/CustomSampler/by_index.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/CustomSampler.ByIndex
```

or

```
./run_framework_tests --re=framework/Samplers/CustomSampler.ByIndex
```

- Test Description:
 - An example of using the Custom Sampler object. In this test we take a single realization by index from a data object.
- Original Author:
 - talbpaul
- Creation date:
 - 2018-11-08
- The classes tested in this test are:
 - Samplers.CustomSampler, DataObjects.PointSet

2.3.602 FRAMEWORK SAMPLERS SPARSEGRID SMOLYAKGRIDTEST

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_sparse_grid.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/SmolyakGridTest
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/SmolyakGridTest
```

- Test Description:
 - This tests using Smolyak-style SparseGridCollocation.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:
 - Samplers.SparseGridCollocation

2.3.603 FRAMEWORK SAMPLERS SPARSEGRID TENSORGRIDTEST

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_tensor_grid.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/TensorGridTest
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/TensorGridTest
```

- Test Description:
 - This tests using non-sparse tensor collocation.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:
 - Samplers.SparseGridCollocation

2.3.604 FRAMEWORK SAMPLERS SPARSEGRID TENSORPRODUCTGRID

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_index_TP.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/tensorPrductGrid
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/tensorProductGrid
```

- Test Description:
 - This tests the creation of a TensorProduct construction sparse grid.
- Original Author:

- talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - IndexSets.TensorProduct

2.3.605 FRAMEWORK SAMPLERS SPARSEGRID TOTALDEGREEGRID

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_index_TD.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/totalDegreeGrid
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/totalDegreeGrid
```

- Test Description:
 - This tests the creation of a TotalDegree construction sparse grid.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - IndexSets.TotalDegree

2.3.606 FRAMEWORK SAMPLERS SPARSEGRID HYPERBOLICCROSSGRID

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_index_HC.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/hyperbolicCrossGrid
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/hyperbolicCrossGrid
```

- Test Description:
 - This tests the creation of a HyperbolicCross construction sparse grid.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - IndexSets.HyperbolicCross

2.3.607 FRAMEWORK SAMPLERS SPARSEGRID CUSTOMGRID

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_index_custom.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/customGrid
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/customGrid
```

- Test Description:
 - This tests the creation of a Custom sparse grid.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - IndexSets.Custom

2.3.608 FRAMEWORK SAMPLERS SPARSEGRID ANISOTROPICGRID

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_index_anisotropic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/anisotropicGrid
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/anisotropicGrid
```

- Test Description:
 - This tests the creation of an anisotropic sparse grid (using the interpolation weights in the ROM).
- Original Author:
 - talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - IndexSets

2.3.609 FRAMEWORK SAMPLERS SPARSEGRID UNIFORM

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_scgpc_uniform.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/uniform
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/uniform
```

- Test Description:
 - This tests using SparseGridCollocation with uniformly-distributed inputs.

- Original Author:
 - talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - Samplers.SparseGridCollocation

2.3.610 FRAMEWORK SAMPLERS SPARSEGRID UNIFORM CC

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_scgpc_uniform_cc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/uniform_cc
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/uniform_cc
```

- Test Description:
 - This tests using SparseGridCollocation with Clenshaw Curtis points and weights (on uniformly-distributed variables).
- Original Author:
 - talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - Samplers.SparseGridCollocation

2.3.611 FRAMEWORK SAMPLERS SPARSEGRID NORMAL

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_scgpc_normal.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/normal
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/normal
```

- Test Description:
 - This tests using SparseGridCollocation with normally-distributed inputs.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - Samplers.SparseGridCollocation

2.3.612 FRAMEWORK SAMPLERS SPARSEGRID GAMMA

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_scgpc_gamma.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/gamma
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/gamma
```

- Test Description:
 - This tests using SparseGridCollocation with gamma-distributed inputs.
- Original Author:

- talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - Samplers.SparseGridCollocation

2.3.613 FRAMEWORK SAMPLERS SPARSEGRID BETA

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_scgpc_beta.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/beta
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/beta
```

- Test Description:
 - This tests using SparseGridCollocation with beta-distributed inputs.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - Samplers.SparseGridCollocation

2.3.614 FRAMEWORK SAMPLERS SPARSEGRID BETANORM

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_scgpc_betanorm.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/betanorm
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/betanorm
```

- Test Description:
 - This tests using SparseGridCollocation with truncated-normal-beta distributed inputs.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - Samplers.SparseGridCollocation

2.3.615 FRAMEWORK SAMPLERS SPARSEGRID TRIANG

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_scgpc_triang.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/triang
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/triang
```

- Test Description:
 - This tests using SparseGridCollocation with triangular-distributed inputs.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - Samplers.SparseGridCollocation

2.3.616 FRAMEWORK SAMPLERS SPARSEGRID EXPONENTIAL

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_scgpc_expon.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/exponential
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/exponential
```

- Test Description:
 - This tests using SparseGridCollocation with exponential-distributed inputs.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-09-11
- The classes tested in this test are:
 - Samplers.SparseGridCollocation

2.3.617 FRAMEWORK SAMPLERS SPARSEGRID ADAPTIVEONVARIANCE

This test can be found at “./raven/tests/framework/Samplers/SparseGrid/test_adaptive_stochpoly_var.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/SparseGrid/AdaptiveOnVariance
```

or

```
./run_framework_tests --re=framework/Samplers/SparseGrid/AdaptiveOnVariance
```

- Test Description:
 - This tests the adaptive sparse grid with adaptive samples chosen and converged according to variance.

- Original Author:
 - talbpaul
- Creation date:
 - 2015-07-07
- The classes tested in this test are:
 - Samplers.AdaptiveSparseGrid

2.3.618 FRAMEWORK SAMPLERS ADAPTIVELIMITSURFACESEARCH.TESTLIMITSURFACEM

This test can be found at “./raven/tests/framework/Samplers/AdaptiveLimitSurfaceSearch/test_limit_surface_multi_grid_acc.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveLimitSurfaceSearch.testLimitSu
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveLimitSurfaceSearch.te
```

- Test Description:
 - This test is aimed to check the capability of RAVEN to perform an adaptive sampling strategy of type LimitSurfaceSearch when using the convergence acceleration scheme of type Multi-Grid.
- Original Author:
 - alfoa
- Creation date:
 - 2015-09-10
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch, Functions.External
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : cogljj
 - date : 2015-09-29
 - description: Modifying external modules to use relative to working directory.
2. revision info:
- author : alfoa
 - date : 2015-10-05
 - description: Modified multigrid test to make it faster
3. revision info:
- author : maljdan
 - date : 2016-05-20
 - description: Updating the test cases to remove references to Point or History.
4. revision info:
- author : maljdan
 - date : 2016-11-08
 - description: Serializing the adaptive tests and regolding the multigrid case since I can validate the results look good. I am still trying to understand what the correct results for the 3D case are.
5. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
6. revision info:
- author : alfoa
 - date : 2017-12-12
 - description: Adapted for new DataObject structure
7. revision info:
- author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.619 FRAMEWORK SAMPLERS ADAPTIVELIMITSURFACESEARCH.ADAPTIVE SAMPLER EXT MODEL

This test can be found at “./raven/tests/framework/Samplers/AdaptiveLimitSurfaceSearch/test_adaptive_sampler.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveLimitSurfaceSearch.adaptive_sar
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveLimitSurfaceSearch.a
```

- Test Description:
 - This test is aimed to test the capability of RAVEN to employ a goal oriented sampling. It tests the LimitSurfaceSearch algorithm using an external model as “system code”
- Original Author:
 - alfoa
- Creation date:
 - 2015-04-09
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch, Models.ExternalModel, Models.ROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-12-12
 - description: Adapted for new DataObject structure
 2. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.620 FRAMEWORK SAMPLERS ADAPTIVELIMITSURFACESEARCH.ADAPTIVE SAMPLER NO CROSSING

This test can be found at “./raven/tests/framework/Samplers/AdaptiveLimitSurfaceSearch/test_limit_surface_no_crossing_transition.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveLimitSurfaceSearch.adaptive_sar
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveLimitSurfaceSearch.a
```

- Test Description:
 - This test is aimed to test that the LimitSurfaceSearch Sampler is able to successfully detect a failure of the adaptive search (No limit surface crossed). This test is connected to the defect mitigation reported in the issue #704
- Original Author:
 - alfoa
- Creation date:
 - 2018-08-25
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch, Models.ExternalModel, Models.ROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-08-25
 - description: Added the test for testing the mitigation for the issue #704
 2. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.621 FRAMEWORK SAMPLERS ADAPTIVELIMITSURFACESEARCH.LIMIT SURFACE 1 DIMENSIONAL

This test can be found at “./raven/tests/framework/Samplers/AdaptiveLimitSurfaceSearch/test_adaptive_sampler_1_d_limit_surface.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/AdaptiveLimitSurfaceSearch.limit_surfa
```

or

```
./run_framework_tests --re=framework/Samplers/AdaptiveLimitSurfaceSearch.l
```

- Test Description:
 - This test is aimed to test the capability of RAVEN to employ a goal oriented sampling. It tests the LimitSurfaceSearch algorithm using an external model as “system code”. In addition it ensures that a 1Dimensional Limit surface can be generated (1 uncertainty).
- Original Author:
 - alfoa
- Creation date:
 - 2018-11-29
- The classes tested in this test are:
 - Samplers.LimitSurfaceSearch, Models.ExternalModel, Models.ROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-11-29
 - description: New test for addressing issue #864
 2. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.622 FRAMEWORK SAMPLERS DYNAMICEVENTTREES.TESTCLASSICDETSHORTRAVEN

This test can be found at “./raven/tests/framework/Samplers/DynamicEventTrees/testDETshort.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/DynamicEventTrees.testClassicDETshortR
```


or

```
./run_framework_tests --re=framework/Samplers/DynamicEventTrees.testClassi
```

- Test Description:
 - An example of using the Dynamic Event Tree Methodology with an external Code (RELAP7-like in this case). This test is a fast executing one that is aimed to check the mechanics of the DET methodology.
- Original Author:
 - alfoa
- Creation date:
 - 2015-10-05
- The classes tested in this test are:
 - Samplers.DynamicEventTree, Models.Code
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input
 2. revision info:
 - author : talbpaul
 - date : 2016-04-26
 - description: Added check for pre-existing backup files when validating
 3. revision info:
 - author : alfoa
 - date : 2016-04-27
 - description: New subdirectories structure
 4. revision info:
 - author : maljdan
 - date : 2016-08-03
 - description: Removing PrintCSV PostProcessor from the DET test cases.
 5. revision info:

- author : maljdan
 - date : 2016-08-08
 - description: Fixing DET test case.
6. revision info:
- author : alfoa
 - date : 2016-10-20
 - description: Modified XSD and removed dim attribute from all the tests
7. revision info:
- author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
8. revision info:
- author : alfoa
 - date : 2018-01-24
 - description: Modification for new DataObject and new option to specify printing and plotting subdirectories (attribute “dir”)
9. revision info:
- author : talbpaul
 - date : 2018-01-26
 - description: Added maxqueue size 1 to be consistent with historical behavior

2.3.623 FRAMEWORK SAMPLERS DYNAMIC EVENT TREES.TESTHYBRIDDETSHORTRAVEN

This test can be found at “./raven/tests/framework/Samplers/DynamicEventTrees/testHybridDET.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/DynamicEventTrees.testHybridDETshortRAVEN
```

or

```
./run_framework_tests --re=framework/Samplers/DynamicEventTrees.testHybridDETshortRAVEN
```

- Test Description:
 - An example of using the Dynamic Event Tree Methodology (Hybrid Dynamic Event Tree) with an external Code (RELAP7-like in this case). This test is a fast executing one that is aimed to check the mechanics of the DET methodology, when epistemic uncertainties need to be modeled.

- Original Author:
 - alfoa
- Creation date:
 - 2015-10-05
- The classes tested in this test are:
 - Samplers.DynamicEventTree, Models.Code
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2016-03-21
 - description: Fixing dynamic event tree RELAP-7 inputs.
 2. revision info:
 - author : maljdan
 - date : 2016-04-06
 - description: Updating test cases to reflect the changes to the user input.
 3. revision info:
 - author : talbpaul
 - date : 2016-04-26
 - description: Added check for pre-existing backup files when validating
 4. revision info:
 - author : alfoa
 - date : 2016-04-27
 - description: New subdirectories structure
 5. revision info:
 - author : maljdan
 - date : 2016-08-03
 - description: Removing PrintCSV PostProcessor from the DET test cases.
 6. revision info:
 - author : alfoa
 - date : 2016-10-20
 - description: Modified XSD and removed dim attribute from all the tests
 7. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

2.3.624 FRAMEWORK TESTADAPTIVEDYNAMICEVENTTREERAVERN

This test can be found at “./raven/tests/framework/Samplers/DynamicEventTrees/test_adaptive_det_simple.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/testAdaptiveDynamicEventTreeRAVERN
```

or

```
./run_framework_tests --re=framework/testAdaptiveDynamicEventTreeRAVERN
```

- Test Description:
 - This test is aimed to test the capability of RAVEN to employ the Adaptive Dynamic Event Tree Sampling strategy (using RELAP7 as system code)
- Original Author:
 - @alfoa
- Creation date:
 - 2015-01-26
- The classes tested in this test are:
 - Samplers.AdaptiveDET
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : @alfoa
 - date : 2016-04-27
 - description: Updating the test in order to accept the new subdirectories' structure
 2. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.625 FRAMEWORK TESTADAPTIVEHYBRIDDYNAMICEVENTTREERA VEN

This test can be found at “./raven/tests/framework/Samplers/DynamicEventTrees/test_adaptive_hybrid_det.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/testAdaptiveHybridDynamicEventTreeRAVEN
```

or

```
./run_framework_tests --re=framework/testAdaptiveHybridDynamicEventTreeRAVEN
```

- Test Description:
 - This test is aimed to test the capability of RAVEN to employ the Adaptive Hybrid Dynamic Event Tree Sampling strategy (using RELAP7 as system code)
- Original Author:
 - @alfoa
- Creation date:
 - 2015-01-26
- The classes tested in this test are:
 - Samplers.AdaptiveDET
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : @alfoa
 - date : 2016-04-27
 - description: Updating the test in order to accept the new subdirectories' structure
 2. revision info:
 - author : alfoa
 - date : 2019-03-07
 - description: Modified syntax in Functions as for issue #934

2.3.626 FRAMEWORK SAMPLERS SOBOL SOBOL

This test can be found at “./raven/tests/framework/Samplers/Sobol/test_sobol_sampler.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers/Sobol/Sobol
```

or

```
./run_framework_tests --re=framework/Samplers/Sobol/Sobol
```

- Test Description:
 - This tests using the Sobol static sampler with the basic syntax.
- Original Author:
 - talbpaul
- Creation date:
 - 2015-09-14
- The classes tested in this test are:
 - Samplers.Sobol

2.3.627 FRAMEWORK SAMPLERS.ADAPTIVEMONTECARLO

This test can be found at “./raven/tests/framework/Samplers/AdaptiveMonteCarlo/test_adaptive_MC_sampler.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/Samplers.AdaptiveMonteCarlo
```

or

```
./run_framework_tests --re=framework/Samplers.AdaptiveMonteCarlo
```

- Test Description:
 - This tests the capability of RAVEN to use the AdaptiveMonteCarlo sampler. Converged on expectedValue of y1 and y2, as well as the sigma of y1 and y2.

- Original Author:
 - ZHOUI2
- Creation date:
 - 2020-02-06
- The classes tested in this test are:
 - Samplers.AdaptiveMonteCarlo, Models.ExternalModel

2.3.628 FRAMEWORK MCMC.METROPOLISOBSERVED

This test can be found at “./raven/tests/framework/MCMC/test_mh_with_observations.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/MCMC.MetropolisObserved
```

or

```
./run_framework_tests --re=framework/MCMC.MetropolisObserved
```

- Test Description:
 - Test the Markov Chain Monte Carlo algorithm: Metropolis Sampling assume $x_i, y_i \sim \text{Normal}(\mu, \text{cov})$, where $\mu = [0, 0]$, and $\text{cov} = \begin{bmatrix} 1.0 & \rho \\ \rho & 1.0 \end{bmatrix}$ 1000 samples is generated using `np.random.multivariate_normal` as the observed data. A non-informative prior for covariance matrices is the Jeffreys prior (see Gelman et al., 1995), which is of the form $1/\det(\text{Cov})^{3/2}$. A uniform distribution $[-0.07, 0.07]$ is used as the proposal distribution.
- Original Author:
 - wangc
- Creation date:
 - 2020-07-27
- The classes tested in this test are:
 - MCMC.Metropolis

2.3.629 FRAMEWORK MCMC.METROPOLISONEDIM

This test can be found at “./raven/tests/framework/MCMC/test_1D.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/MCMC.MetropolisOneDim
```

or

```
./run_framework_tests --re=framework/MCMC.MetropolisOneDim
```

- Test Description:
 - Test the Markov Chain Monte Carlo algorithm: Metropolis Sampling Test to see if there is any degradation in Metropolis Sampling A large number (80000) of samples is used to test the efficiency of Metropolis Sampler. It takes about 550 second in Mac machine. If the time to run this test exceed 700s, some investigation should be conducted to resolve the issue. Heavy test: 550s on Mac, set MaxTime to 700s
- Original Author:
 - wangc
- Creation date:
 - 2020-12-20
- The classes tested in this test are:
 - MCMC.Metropolis

2.3.630 FRAMEWORK MCMC.METROPOLISONEDIMTUNE

This test can be found at “./raven/tests/framework/MCMC/test_1D_tune.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/MCMC.MetropolisOneDimTune
```

or

```
./run_framework_tests --re=framework/MCMC.MetropolisOneDimTune
```

- Test Description:

- Test the Markov Chain Monte Carlo algorithm: Metropolis Sampling specifically testing the auto tuning of scaling parameter with provided tune interval.
- Original Author:
 - wangc
- Creation date:
 - 2020-12-20
- The classes tested in this test are:
 - MCMC.Metropolis

2.3.631 FRAMEWORK MCMC.METROPOLISTENDIM

This test can be found at “./raven/tests/framework/MCMC/test_10D.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/MCMC.MetropolisTenDim
```

or

```
./run_framework_tests --re=framework/MCMC.MetropolisTenDim
```

- Test Description:
 - Test the Markov Chain Monte Carlo algorithm: Metropolis Sampling for high-dimensional input space (10-dim): likelihood function: N-Dimensional Gaussian distribution with μ Normal(0, 10), analytical mean values: [-3.23840979, 4.32107943, 0.18209698, -5.10287563, -2.01392171, 10.67490632, -0.26232032, 5.92550919, 7.70044106, 6.86019041] var LogNormal(0, 1.5), analytical std values: [1.58121149, 1.30760725, 0.25210521, 4.22805349, 2.75537484, 15.26527159, 0.16109538, 1.0258734 , 0.0772615 , 4.86960071] Prior on mean is U(-500, 500)
- Original Author:
 - wangc
- Creation date:
 - 2020-12-20
- The classes tested in this test are:
 - MCMC.Metropolis

2.3.632 FRAMEWORK MCMC.METROPOLISTENDIMMVN

This test can be found at “./raven/tests/framework/MCMC/test_10D_mvn.xml”.

This test can be called executing the following command:

```
./run_tests --re=framework/MCMC.MetropolisTenDimMVN
```

or

```
./run_framework_tests --re=framework/MCMC.MetropolisTenDimMVN
```

- Test Description:
 - Test the Markov Chain Monte Carlo algorithm: Adaptive Metropolis Sampling likelihood function: N-Dimensional Gaussian distribution with input space (10-dim): mu Normal(0, 10), analytical mean values: [-3.23840979, 4.32107943, 0.18209698, -5.10287563, -2.01392171, 10.67490632, -0.26232032, 5.92550919, 7.70044106, 6.86019041] var LogNormal(0, 1.5), analytical std values: [1.58121149, 1.30760725, 0.25210521, 4.22805349, 2.75537484, 15.26527159, 0.16109538, 1.0258734 , 0.0772615 , 4.86960071] Prior on mean is U(-500, 500)
- Original Author:
 - wangc
- Creation date:
 - 2020-12-20
- The classes tested in this test are:
 - MCMC.Metropolis

2.3.633 FRAMEWORK MCMC.METROPOLISTENDIMPROPMVN

This test can be found at “./raven/tests/framework/MCMC/test_10D_proposal_mvn.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/MCMC.MetropolisTenDimPropMVN
```

or

```
./run_framework_tests --re=framework/MCMC.MetropolisTenDimPropMVN
```

- Test Description:
 - Test the Markov Chain Monte Carlo algorithm: Adaptive Metropolis Sampling likelihood function: N-Dimensional Gaussian distribution with input space (10-dim): mu Normal(0, 10), analytical mean values: [-3.23840979, 4.32107943, 0.18209698, -5.10287563, -2.01392171, 10.67490632, -0.26232032, 5.92550919, 7.70044106, 6.86019041] var LogNormal(0, 1.5), analytical std values: [1.58121149, 1.30760725, 0.25210521, 4.22805349, 2.75537484, 15.26527159, 0.16109538, 1.0258734, 0.0772615, 4.86960071] Prior on mean is U(-500, 500)
- Original Author:
 - wangc
- Creation date:
 - 2020-12-20
- The classes tested in this test are:
 - MCMC.Metropolis

2.3.634 FRAMEWORK MCMC.ADAPTIVEMETROPOLIS

This test can be found at “./raven/tests/framework/MCMC/test_amh.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/MCMC.AdaptiveMetropolis
```

or

```
./run_framework_tests --re=framework/MCMC.AdaptiveMetropolis
```

- Test Description:
 - Test the Markov Chain Monte Carlo algorithm: Adaptive Metropolis Sampling A 2-D multivariate normal distribution is used as the likelihood function. mean: [5, 5], cov=[[1, 0.9], [0.9, 1]] Both input parameters have the standard normal distribution as their prior distribution. The proposal distributions for the input variables are also standard normal distribution. “TargetEvaluation” is used to collect the inputs and outputs from the likelihood model. “SolutionExport” is used to store the posterior values for the input variables, i.e. “xin” and “yin”
- Original Author:

- wangc
- Creation date:
 - 2020-12-20
- The classes tested in this test are:
 - MCMC.Metropolis

2.3.635 FRAMEWORK MCMC.ADAPTIVEMETROPOLISMVN

This test can be found at “./raven/tests/framework/MCMC/test_amh_mvn.xml”.
 This test can be called executing the following command:

```
./run_tests --re=framework/MCMC.AdaptiveMetropolisMVN
```

or

```
./run_framework_tests --re=framework/MCMC.AdaptiveMetropolisMVN
```

- Test Description:
 - Test the Markov Chain Monte Carlo algorithm: Adaptive Metropolis Sampling A 2-D multivariate normal distribution is used as the likelihood function. mean: [5, 5], cov=[[1, 0.9], [0.9, 1]] Input parameters have the multivariate normal distribution as their prior distribution. The proposal distributions for the input variables are also standard normal distribution. “TargetEvaluation” is used to collect the inputs and outputs from the likelihood model. “SolutionExport” is used to store the posterior values for the input variables, i.e. “xin” and “yin”
- Original Author:
 - wangc
- Creation date:
 - 2020-12-20
- The classes tested in this test are:
 - MCMC.Metropolis

2.3.636 FRAMEWORK MCMC.ADAPTIVEMETROPOLISPROPMVN

This test can be found at “./raven/tests/framework/MCMC/test_amh_prop_mvn.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/MCMC.AdaptiveMetropolisPropMVN
```

or

```
./run_framework_tests --re=framework/MCMC.AdaptiveMetropolisPropMVN
```

- Test Description:
 - Test the Markov Chain Monte Carlo algorithm: Adaptive Metropolis Sampling A 2-D multivariate normal distribution is used as the likelihood function. mean: [5, 5], cov=[[1, 0.9], [0.9, 1]] Both input parameters have the standard normal distribution as their prior distribution. The proposal distributions for the input variables multivariate normal distribution. “TargetEvaluation” is used to collect the inputs and outputs from the likelihood model. “SolutionExport” is used to store the posterior values for the input variables, i.e. “xin” and “yin”
- Original Author:
 - wangc
- Creation date:
 - 2020-12-20
- The classes tested in this test are:
 - MCMC.Metropolis

2.3.637 FRAMEWORK PCA LHS LHSVALUE

This test can be found at “./raven/tests/framework/pca_LHS/test_LHS_pca_value.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_LHS/LHSValue
```

or

```
./run_framework_tests --re=framework/pca_LHS/LHSValue
```

- Test Description:
 - Tests use of the PCA method to sample in LHS surrogate input space, with grid constructed by value.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-18
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers.Stratified, PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-20
 - description: convert test to use the new DataObjects with the new structure of basic statistic

2.3.638 FRAMEWORK PCA LHS LHSCDF

This test can be found at “./raven/tests/framework/pca_LHS/test_LHS_pca_cdf.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_LHS/LHSCdf
```

or

```
./run_framework_tests --re=framework/pca_LHS/LHSCdf
```

- Test Description:
 - Tests use of the PCA method to sample in LHS surrogate input space, with grid constructed via CDF.
- Original Author:
 - wangc

- Creation date:
 - 2015-11-18
- The classes tested in this test are:
 - Distributions.MultivariateNormal,Samplers.Stratified,PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-20
 - description: convert test to use the new DataObjects with the new structure of basic statistic

2.3.639 FRAMEWORK PCA LHS STRATIFIEDVALUE

This test can be found at “./raven/tests/framework/pca_LHS/test_stratified_pca_value.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_LHS/stratifiedValue
```

or

```
./run_framework_tests --re=framework/pca_LHS/stratifiedValue
```

- Test Description:
 - Tests use of the PCA method to sample in LHS surrogate input space with grid by value.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-18
- The classes tested in this test are:
 - Distributions.MultivariateNormal,Samplers.Stratified

2.3.640 FRAMEWORK PCA LHS STRATIFIEDCDF

This test can be found at “./raven/tests/framework/pca_LHS/test_stratified_pca_cdf.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_LHS/stratifiedCdf
```

or

```
./run_framework_tests --re=framework/pca_LHS/stratifiedCdf
```

- Test Description:
 - Tests use of the PCA method to sample in LHS surrogate input space with grid by CDF.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-18
- The classes tested in this test are:
 - Distributions.MultivariateNormal,Samplers.Stratified

2.3.641 FRAMEWORK PCA LHS LHS

This test can be found at “./raven/tests/framework/pca_LHS/test_LHS.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_LHS/LHS
```

or

```
./run_framework_tests --re=framework/pca_LHS/LHS
```

- Test Description:
 - Tests use of the PCA method to sample in LHS surrogate input space.
- Original Author:

- wangc
- Creation date:
 - 2015-11-18
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers.Stratified, PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-20
 - description: convert test to use the new DataObjects with the new structure of basic statistic

2.3.642 FRAMEWORK PCA LHS LHSCORRELATED

This test can be found at “./raven/tests/framework/pca_LHS/test_LHS_correlated_cdf.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_LHS/LHSCorrelated
```

or

```
./run_framework_tests --re=framework/pca_LHS/LHSCorrelated
```

- Test Description:
 - Tests use of the PCA method to sample in LHS surrogate input space. The distributions are a multivariate normal.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-18
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers.Stratified, PostProcessors.BasicStatistics

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc
- date : 2017-12-20
- description: convert test to use the new DataObjects with the new structure of basic statistic

2.3.643 FRAMEWORK PCA LHS LHSUNCORRELATED

This test can be found at “./raven/tests/framework/pca_LHS/test_LHS_uncorrelated_cdf.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_LHS/LHSUncorrelated
```

or

```
./run_framework_tests --re=framework/pca_LHS/LHSUncorrelated
```

- Test Description:
 - Benchmark for test of the PCA method to sample in LHS surrogate input space.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-18
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers.Stratified, PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2017-12-20
 - description: convert test to use the new DataObjects with the new structure of basic statistic

2.3.644 FRAMEWORK DATAOBJECTS.TEST OUTPUT POINT ATTRIBUTES

This test can be found at “./raven/tests/framework/DataObjects/pointSetAttributes.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.test_output_point_attributes
```

or

```
./run_framework_tests --re=framework/DataObjects.test_output_point_attributes
```

- Test Description:
 - Test to check the functionalities of DataObjects preprocess the data applying simple operator (e.g. max value, average, min value, etc.), in the *options* XML node. In this case it tests the attributes for PointSet.
- Original Author:
 - alfoa
- Creation date:
 - 2018-02-01
- The classes tested in this test are:
 - DataObjects.PointSet, Models.ExternalModel

2.3.645 FRAMEWORK DATAOBJECTS.TEST OUTPUT ATTRIBUTES

This test can be found at “./raven/tests/framework/DataObjects/historySetAttributes.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.test_output_attributes
```

or

```
./run_framework_tests --re=framework/DataObjects.test_output_attributes
```

- Test Description:

- Test to check the functionalities of DataObjects preprocess the data applying simple operator (e.g. max value, average, min value, etc.), in the *options* XML node. In this case it tests the attributes for HistorySet.
- Original Author:
 - alfoa
- Creation date:
 - 2018-02-01
- The classes tested in this test are:
 - DataObjects.HistorySet, Models.ExternalModel

2.3.646 FRAMEWORK DATAOBJECTS.TEST OUTPUT FROM DB POINT ATTRIBUTES

This test can be found at “. /raven/tests/framework/DataObjects/pointSetFromDBAttributes.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.test_output_from_db_point_attributes
```

or

```
./run_framework_tests --re=framework/DataObjects.test_output_from_db_point
```

- Test Description:
 - Test to check the functionalities of DataObjects preprocess the data applying simple operator (e.g. max value, average, min value, etc.), in the *options* XML node. In this case it tests the attributes for PointSet coming from a Database.
- Original Author:
 - alfoa
- Creation date:
 - 2018-02-01
- The classes tested in this test are:
 - DataObjects.PointSet, Models.ExternalModel

2.3.647 FRAMEWORK DATAOBJECTS.TEST OUTPUT FROM DB HISTORY ATTRIBUTES

This test can be found at “./raven/tests/framework/DataObjects/historySetFromDBAttributes.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.test_output_from_db_history_attributes
```

or

```
./run_framework_tests --re=framework/DataObjects.test_output_from_db_history_attributes
```

- Test Description:
 - Test to check the functionalities of DataObjects preprocess the data applying simple operator (e.g. max value, average, min value, etc.), in the *options* XML node. In this case it tests the attributes for HistorySet coming from a DataBase.
- Original Author:
 - alfoa
- Creation date:
 - 2018-02-01
- The classes tested in this test are:
 - DataObjects.HistorySet, Models.ExternalModel

2.3.648 FRAMEWORK DATAOBJECTS.DATAOBJECT METADATA

This test can be found at “./raven/tests/framework/DataObjects/test_DataObject_metadata.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.dataObject_metadata
```

or

```
./run_framework_tests --re=framework/DataObjects.dataObject_metadata
```

- Test Description:

- Test to check the functionalities of `DataObjects.PointSet`, when metadata need to be dumped out. In this test, the `PointProbability` generated during the employment of a sampling strategy is dumped in the CSV files, even if it is part of the metadata container.
- Original Author:
 - maljdan
- Creation date:
 - 2016-06-23
- The classes tested in this test are:
 - `DataObjects.PointSet`
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : maljdan
 - date : 2016-06-23
 - description: Moving test case into a specific `DataObjects` folder
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.649 FRAMEWORK DATAOBJECTS.LOAD CSV

This test can be found at “`./raven/tests/framework/DataObjects/test_load_csv.xml`”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.load_csv
```

or

```
./run_framework_tests --re=framework/DataObjects.load_csv
```

- Test Description:
 - Test to check the functionalities of `DataObjects.PointSet` to be constructed by an extern input file (csv)

- Original Author:
 - maljdan
- Creation date:
 - 2016-06-23
- The classes tested in this test are:
 - DataObjects.PointSet
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.650 FRAMEWORK DATAOBJECTS.LOADXLSCSV

This test can be found at “./raven/tests/framework/DataObjects/load_xls_csv.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.LoadXlsCsv
```

or

```
./run_framework_tests --re=framework/DataObjects.LoadXlsCsv
```

- Test Description:
 - Test to check a CSV from Excel can be loaded. Note that the main problem is the first character in the file, which depends on the encoding. The source file was made by loading a CSV from text in Excel and saving as CSV.
- Original Author:
 - talbpaul
- Creation date:
 - 2021-05-20
- The classes tested in this test are:
 - DataObjects.DataSet

2.3.651 FRAMEWORK DATAOBJECTS.LOAD CSV HISTORY

This test can be found at “./raven/tests/framework/DataObjects/test_load_csv_history.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.load_csv_history
```

or

```
./run_framework_tests --re=framework/DataObjects.load_csv_history
```

- Test Description:
 - Test to check the functionalities of DataObjects.HistorySet to be constructed by an extern input file (csv)
- Original Author:
 - maljdan
- Creation date:
 - 2016-06-23
- The classes tested in this test are:
 - DataObjects.HistorySet
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.652 FRAMEWORK DATAOBJECTS.LOAD CSV HISTORY

This test can be found at “./raven/tests/framework/DataObjects/load_csv_dataset.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.load_csv_history
```

or


```
./run_framework_tests --re=framework/DataObjects.load_csv_history
```

- Test Description:
 - Test to check the functionalities of DataObjects.DataSet to be constructed by an external input file (csv)
- Original Author:
 - maljdan
- Creation date:
 - 2018-04-26
- The classes tested in this test are:
 - DataObjects.DataSet

2.3.653 FRAMEWORK DATAOBJECTS.LOAD TWO CSVS

This test can be found at “./raven/tests/framework/DataObjects/test_load_two_csvs.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.load_two_csvs
```

or

```
./run_framework_tests --re=framework/DataObjects.load_two_csvs
```

- Test Description:
 - This test verifies that multiple files can be loaded into a single point set without destroying the information from each other.
- Original Author:
 - maljdan
- Creation date:
 - 2017-06-26
- The classes tested in this test are:
 - DataObjects.PointSet

2.3.654 FRAMEWORK DATAOBJECTS.LOAD TWO CSV HISTORIES

This test can be found at “./raven/tests/framework/DataObjects/test_load_two_csv_histories.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.load_two_csv_histories
```

or

```
./run_framework_tests --re=framework/DataObjects.load_two_csv_histories
```

- Test Description:
 - This test verifies that multiple csv files can be loaded into a single history set without destroying the information from each other.
- Original Author:
 - maljdan
- Creation date:
 - 2017-06-26
- The classes tested in this test are:
 - DataObjects.HistorySet

2.3.655 FRAMEWORK DATAOBJECTS.LOAD TWO CSV HISTORIES FAIL

This test can be found at “./raven/tests/framework/DataObjects/load_two_csv_histories_fail.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.load_two_csv_histories_fail
```

or

```
./run_framework_tests --re=framework/DataObjects.load_two_csv_histories_fa
```

- Test Description:
 - The input variable ”b” is missing in the second history set, replaced by ”e”, so the result dataobject fails to construct. This test checks the error received.

- Original Author:
 - talbpaul
- Creation date:
 - 2018-01-23
- The classes tested in this test are:
 - DataObjects.HistorySet

2.3.656 FRAMEWORK DATAOBJECTS.LOAD PRINT LARGE NUM VARS

This test can be found at “./raven/tests/framework/DataObjects/test_large_num_vars.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.load_print_large_num_vars
```

or

```
./run_framework_tests --re=framework/DataObjects.load_print_large_num_vars
```

- Test Description:
 - Test to check the performance of load and print of DataSet
- Original Author:
 - wangc
- Creation date:
 - 2018-11-11
- The classes tested in this test are:
 - DataObjects.DataSet

2.3.657 FRAMEWORK DATAOBJECTS.LOAD PRINT LARGE NUM VARS HEAVY

This test can be found at “./raven/tests/framework/DataObjects/test_large_num_vars_heavy.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.load_print_large_num_vars_heavy
```

or

```
./run_framework_tests --re=framework/DataObjects.load_print_large_num_vars
```

- Test Description:
 - Test to check the performance of load and print of DataSet
- Original Author:
 - wangc
- Creation date:
 - 2018-11-11
- The classes tested in this test are:
 - DataObjects.DataSet

2.3.658 FRAMEWORK DATAOBJECTS.STRINGIO

This test can be found at “./raven/tests/framework/DataObjects/string_io.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/DataObjects.StringIO
```

or

```
./run_framework_tests --re=framework/DataObjects.StringIO
```

- Test Description:
 - Tests that strings can be part of the output space.
- Original Author:

- talbpaul
- Creation date:
 - 2020-07-07
- The classes tested in this test are:
 - DataObjects.DataSet

2.3.659 FRAMEWORK VARIABLEGROUPS SETOPERATIONS

This test can be found at “./raven/tests/framework/VariableGroups/sets.xml”.
 This test can be called executing the following command:

```
./run_tests --re=framework/VariableGroups/SetOperations
```

or

```
./run_framework_tests --re=framework/VariableGroups/SetOperations
```

- Test Description:
 - Tests complex VariableGroup construction using plus, minus, intersect, and symmetric difference operations. Uses these constructs in the DataObjects.
 To test correct operation, check the headers of the output data objects for the right variable lists, both the names themselves and the order of the columns.
 Additional unit tests for VariableGroups are in the raven/tests/framework/unit_tests/utlils/testXmlUtils.p file.
- Original Author:
 - talbpaul
- Creation date:
 - 2016-02-08
- The classes tested in this test are:
 - VariableGroups
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:

- author : talbpaul
- date : 2018-09-25
- description: implicit nested group usage instead of explicit

2. revision info:

- author : talbpaul
- date : 2020-10-15
- description: empty vg with comment

2.3.660 FRAMEWORK VARIABLEGROUPS ROM

This test can be found at “./raven/tests/framework/VariableGroups/rom.xml”.
This test can be called executing the following command:

```
./run_tests --re=framework/VariableGroups/ROM
```

or

```
./run_framework_tests --re=framework/VariableGroups/ROM
```

- Test Description:
 - tests variable groups when used as part of a ROM or external model
- Original Author:
 - talbpaul
- Creation date:
 - 2016-02-08
- The classes tested in this test are:
 - VariableGroups

2.3.661 FRAMEWORK VARIABLEGROUPS EXTERNALNODES

This test can be found at “./raven/tests/framework/VariableGroups/extnodes.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/VariableGroups/ExternalNodes
```

or

```
./run_framework_tests --re=framework/VariableGroups/ExternalNodes
```

- Test Description:
 - tests variable groups used in external XML
- Original Author:
 - talbpaul
- Creation date:
 - 2016-02-08
- The classes tested in this test are:
 - VariableGroups

2.3.662 FRAMEWORK VARIABLEGROUPS ORDEREDVARIABLES

This test can be found at “./raven/tests/framework/VariableGroups/ordered.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/VariableGroups/OrderedVariables
```

or

```
./run_framework_tests --re=framework/VariableGroups/OrderedVariables
```

- Test Description:
 - tests order preservation of variables in variable groups
- Original Author:
 - talbpaul
- Creation date:
 - 2016-02-08
- The classes tested in this test are:
 - VariableGroups

2.3.663 FRAMEWORK.TEST XSD INPUT DATA

This test can be found at “./raven/tests/framework/TestXSD/TestDataRead.py”.

This test can be called executing the following command:

```
./run_tests --re=framework.test_xsd_input_data
```

or

```
./run_framework_tests --re=framework.test_xsd_input_data
```

- Test Description:
 - This test is aimed to check the functionality of the XSD python validator
- Original Author:
 - cogljj
- Creation date:
 - 2016-04-11
- The classes tested in this test are:
 - None
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : cogljj
 - date : 2016-04-12
 - description: Adding a findFirst function to the xml reader.
 2. revision info:
 - author : cogljj
 - date : 2016-04-12
 - description: Renaming text to value in ParameterInput
 3. revision info:
 - author : cogljj
 - date : 2016-07-05
 - description: Add ability to run without lxml. The first checkes for lxml and skips the test if missing. The second checkes for lxml before running part of the test.

4. revision info:

- author : alfoa
- date : 2017-01-21
- description: Adding this test description.

5. revision info:

- author : alfoa
- date : 2018-01-31
- description: Modified for new dataobject and correct check of boolean types

2.3.664 CROW.TEST NORMAL

This test can be found at “./raven/tests/framework/TestXSD/TestStrictCheck.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_normal
```

or

```
./run_framework_tests --re=crow.test_normal
```

- Test Description:

- This test is a Unit Test for the RAVEN input checker. This test is aimed to check that the input checker (Strict mode) is able to detect input errors.

- Original Author:

- cogljj

- Creation date:

- 2017-08-30

- The classes tested in this test are:

-

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : alfoa
- date : 2018-05-15
- description: Adding this test description.

2.3.665 FRAMEWORK.TEST XSD INPUT FAILS

This test can be found at “./raven/tests/framework/TestXSD/TestFails.py”. This test can be called executing the following command:

```
./run_tests --re=framework.test_xsd_input_fails
```

or

```
./run_framework_tests --re=framework.test_xsd_input_fails
```

- Test Description:
 - This test is aimed to check the functionality of the XSD python validator (failure)
- Original Author:
 - coglj
- Creation date:
 - 2016-04-11
- The classes tested in this test are:
 -
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.666 FRAMEWORK PCA ADAPTIVE SGC TEST ADAPTIVE SGC PCA ANALYTIC

This test can be found at “./raven/tests/framework/pca_adaptive_sgc/test_adaptive_sgc_pca_analytic.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_adaptive_sgc/test_adaptive_sgc_pca_analytic
```

or

```
./run_framework_tests --re=framework/pca_adaptive_sgc/test_adaptive_sgc_pc
```

- Test Description:
 - Tests use of the PCA method for adaptive sparse grids on polynomial models.
- Original Author:
 - wangc
- Creation date:
 - 2015-11-30
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers.AdaptiveSparseGrid, SupervisedLearning.GaussPolynomial
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-08
 - description: moved from ROM-File to ROM-DataObject

2.3.667 FRAMEWORK PCA ADAPTIVE SGC TEST ADAPTIVE SGC ATTENU CORRELATION

This test can be found at “./raven/tests/framework/pca_adaptive_sgc/test_adaptive_sgc_attenu_correlation.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/pca_adaptive_sgc/test_adaptive_sgc_attenu_corre
```

or

```
./run_framework_tests --re=framework/pca_adaptive_sgc/test_adaptive_sgc_at
```

- Test Description:
 - Tests use of the PCA method for adaptive sparse grids on exponential decay models with nonzero covariance.

- Original Author:
 - wangc
- Creation date:
 - 2015-11-30
- The classes tested in this test are:
 - Distributions.MultivariateNormal, Samplers.AdaptiveSparseGrid, SupervisedLearning.GaussPolynomial
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-08
 - description: moving from ROM-file to ROM-dataobject

2.3.668 FRAMEWORK ALIASSYSTEMTESTS.TESTROMALIASED

This test can be found at “./raven/tests/framework/aliasSystemTests/test_rom_aliased.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/aliasSystemTests.testROMAliased
```

or

```
./run_framework_tests --re=framework/aliasSystemTests.testROMAliased
```

- Test Description:
 - An example of using the the alias system in RAVEN with a ROM Model. This capability allows the user to alias Models variables within the RAVEN framework
- Original Author:
 - alfoa
- Creation date:
 - 2016-11-18
- The classes tested in this test are:

- Models.ROM, Models.AliasSystem
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2016-11-22
 - description: Closes #754
 2. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.669 FRAMEWORK ALIASSYSTEMTESTS.TESTEXTERNALMODELALIASED

This test can be found at “./raven/tests/framework/aliasSystemTests/test_external_model_aliased.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/aliasSystemTests.testExternalModelAliased
```

or

```
./run_framework_tests --re=framework/aliasSystemTests.testExternalModelAli
```

- Test Description:
 - An example of using the the alias system in RAVEN with an External Model. This capability allows the user to alias Models variables within the RAVEN framework
- Original Author:
 - alfoa
- Creation date:
 - 2016-11-18
- The classes tested in this test are:
 - Models.ExternalModel, Models.AliasSystem
- Since the creation of this test, the following main revisions have been performed:

1. revision info:
 - author : alfoa
 - date : 2016-11-22
 - description: Closes #754
2. revision info:
 - author : alfoa
 - date : 2016-11-28
 - description: Added XSD schema and Closes #756
3. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.
4. revision info:
 - author : talbpaul
 - date : 2018-04-04
 - description: added awful.variable+name for hard-testing input alias

2.3.670 FRAMEWORK ALIASSYSTEMTESTS.TESTENSEMBLEMODELALIASED

This test can be found at “./raven/tests/framework/aliasSystemTests/test_ensemble_model_aliased.xml”. This test can be called executing the following command:

```
./run_tests --re=framework/aliasSystemTests.testEnsembleModelAliased
```

or

```
./run_framework_tests --re=framework/aliasSystemTests.testEnsembleModelAli
```

- Test Description:
 - An example of using the the alias system in RAVEN with an Ensemble Model. This capability allows the user to alias Models variables within the RAVEN framework
- Original Author:
 - alfoa
- Creation date:

- 2016-11-30
- The classes tested in this test are:
 - Models.EnsembleModel, Models.AliasSystem
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2017-01-21
 - description: Adding this test description.

2.3.671 FRAMEWORK.DISTRIBUTIONS.CATEGORICAL

This test can be found at “./raven/tests/framework/Distributions/test_distributionsCategorical.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.Distributions.categorical
```

or

```
./run_framework_tests --re=framework.Distributions.categorical
```

- Test Description:
 - This test is aimed to test the capability of RAVEN to use 1D Categorical distributions.
- Original Author:
 - mandd
- Creation date:
 - 2016-11-02
- The classes tested in this test are:
 - Distributions.Categorical
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa

- date : 2017-01-21
 - description: Adding this test description.
2. revision info:
- author : wangc
 - date : 2017-12-20
 - description: convert test to use the new DataObjects with the new structure of basic statistic
3. revision info:
- author : wangc
 - date : 2018-12-18
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwise metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.672 FRAMEWORK.DISTRIBUTIONS.LAPLACE

This test can be found at “./raven/tests/framework/Distributions/test_distributionsLap.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.Distributions.laplace
```

or

```
./run_framework_tests --re=framework.Distributions.laplace
```

- Test Description:
 - This test is aimed to test the capability of RAVEN to use 1D Laplace distributions.
- Original Author:
 - cogljj
- Creation date:
 - 2017-04-26
- The classes tested in this test are:
 - Distributions.Laplace

2.3.673 FRAMEWORK.DISTRIBUTIONS.GEOMETRIC

This test can be found at “./raven/tests/framework/Distributions/test_distributionsGeometric.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.Distributions.geometric
```

or

```
./run_framework_tests --re=framework.Distributions.geometric
```

- Test Description:
 - This test is aimed to test the capability of RAVEN to use 1D Geometric distribution.
- Original Author:
 - coglj
- Creation date:
 - 2017-04-26
- The classes tested in this test are:
 - Distributions.Geometric

2.3.674 FRAMEWORK.DISTRIBUTIONS.CATEGORICAL

This test can be found at “./raven/tests/framework/Distributions/test_distributionsMarkov.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.Distributions.categorical
```

or

```
./run_framework_tests --re=framework.Distributions.categorical
```

- Test Description:
 - This test is aimed to test the capability of RAVEN to use 1D Markov Categorical distributions.

- Original Author:
 - wangc
- Creation date:
 - 2018-01-24
- The classes tested in this test are:
 - Distributions.Markov

2.3.675 FRAMEWORK.DISTRIBUTIONS.LOGUNIFORM

This test can be found at “./raven/tests/framework/Distributions/test_distributionsLogUniform.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.Distributions.logUniform
```

or

```
./run_framework_tests --re=framework.Distributions.logUniform
```

- Test Description:
 - This test checks the capability of RAVEN to use 1D LogUniform distributions (natural).
- Original Author:
 - mandd
- Creation date:
 - 2018-05-07
- The classes tested in this test are:
 - Distributions.LogUniform

2.3.676 FRAMEWORK.DISTRIBUTIONS.LOG10UNIFORM

This test can be found at “./raven/tests/framework/Distributions/test_distributionsLog10Uniform.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.Distributions.log10Uniform
```

or

```
./run_framework_tests --re=framework.Distributions.log10Uniform
```

- Test Description:
 - This test checks the capability of RAVEN to use 1D LogUniform distributions (decimal base).
- Original Author:
 - mandd
- Creation date:
 - 2018-05-07
- The classes tested in this test are:
 - Distributions.LogUniform

2.3.677 FRAMEWORK.DISTRIBUTIONS.UNIFORMDISCRETE

This test can be found at “./raven/tests/framework/Distributions/test_distributionsUniformDiscrete.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.Distributions.uniformDiscrete
```

or

```
./run_framework_tests --re=framework.Distributions.uniformDiscrete
```

- Test Description:
 - This test checks the capability of RAVEN to use UniformDiscrete distribution (strategy=withReplacement).

- Original Author:
 - mandd
- Creation date:
 - 2020-06-05
- The classes tested in this test are:
 - Distributions.UniformDiscrete

2.3.678 FRAMEWORK.DISTRIBUTIONS.UNIFORMDISCRETEWITHOUTREPLACEMENT

This test can be found at “./raven/tests/framework/Distributions/test_distributionsUniformDiscreteWithoutReplacement.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.Distributions.uniformDiscreteWithoutReplacement
```

or

```
./run_framework_tests --re=framework.Distributions.uniformDiscreteWithoutReplacement
```

- Test Description:
 - This test checks the capability of RAVEN to use UniformDiscrete distribution (strategy=withoutReplacement)..
- Original Author:
 - mandd
- Creation date:
 - 2020-06-05
- The classes tested in this test are:
 - Distributions.UniformDiscrete

2.3.679 FRAMEWORK.DISTRIBUTIONS.UNIFORMDISCRETEWITHOUTREPLACEMENTSMALL

This test can be found at “./raven/tests/framework/Distributions/test_distributionsUniformDiscreteWithoutReplacement.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.Distributions.uniformDiscreteWithoutReplacement
```

or

```
./run_framework_tests --re=framework.Distributions.uniformDiscreteWithoutReplacement
```

- Test Description:
 - This test checks the capability of RAVEN to use UniformDiscrete distribution (case where the number of variables linked to the UniformDiscrete distribution support cardinality).
- Original Author:
 - mandd
- Creation date:
 - 2020-06-05
- The classes tested in this test are:
 - Distributions.UniformDiscrete

2.3.680 FRAMEWORK.DISTRIBUTIONS.UNIFORMDISCRETEWITHOUTREPLACEMENTFLOAT

This test can be found at “./raven/tests/framework/Distributions/test_distributionsUniformDiscreteWithoutReplacement.xml”. This test can be called executing the following command:

```
./run_tests --re=framework.Distributions.uniformDiscreteWithoutReplacement
```

or

```
./run_framework_tests --re=framework.Distributions.uniformDiscreteWithoutReplacement
```

- Test Description:

- This test checks the capability of RAVEN to use UniformDiscrete distribution when the support is float and not integer.
- Original Author:
 - mandd
- Creation date:
 - 2020-06-05
- The classes tested in this test are:
 - Distributions.UniformDiscrete

2.3.681 CROW.TEST_IMPORT

This test can be found at “./raven/tests/crow/test_import.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_import
```

or

```
./run_framework_tests --re=crow.test_import
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests the import of the crow library
- Original Author:
 - coglj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.682 CROW.TEST UTILS

This test can be found at “./raven/tests/crow/test_utils.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_utils
```

or

```
./run_framework_tests --re=crow.test_utils
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the classes that are swigged in CROW are accessible by Python
- Original Author:
 - coglj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.683 CROW.TEST NORMAL

This test can be found at “./raven/tests/crow/test_normal.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_normal
```

or

```
./run_framework_tests --re=crow.test_normal
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the normal distribution is accessible by Python
- Original Author:
 - cogljj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.684 CROW.TEST LAPLACE

This test can be found at “./raven/tests/crow/test_laplace.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_laplace
```

or

```
./run_framework_tests --re=crow.test_laplace
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the laplace distribution is accessible by Python

- Original Author:
 - cogljj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.685 CROW.TEST GEOMETRIC

This test can be found at “./raven/tests/crow/test_geometric.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_geometric
```

or

```
./run_framework_tests --re=crow.test_geometric
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the geometric distribution is accessible by Python
- Original Author:
 - cogljj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:

- crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.686 CROW.TEST SVD

This test can be found at “./raven/tests/crow/test_eigen_svd.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_svd
```

or

```
./run_framework_tests --re=crow.test_svd
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the MultiVariate Normal distribution is accessible by Python and that the SVD on the covariance is performable in Python
- Original Author:
 - cogljj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.687 CROW.TEST REDUCTION

This test can be found at “./raven/tests/crow/test_reduction.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_reduction
```

or

```
./run_framework_tests --re=crow.test_reduction
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the MultiVariate Normal distribution is accessible by Python and that the dimensionality reduction based on the covariance is correctly performed.
- Original Author:
 - cogljj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.688 CROW.TEST PCA INDEX

This test can be found at “./raven/tests/crow/test_pca_index.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_pca_index
```

or

```
./run_framework_tests --re=crow.test_pca_index
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the MultiVariate Normal distribution is accessible by Python and that PCA back transformation is correctly implemented
- Original Author:
 - cogljj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.689 CROW.TEST MVN PCA

This test can be found at “./raven/tests/crow/test_mvn_pca.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_mvn_pca
```

or

```
./run_framework_tests --re=crow.test_mvn_pca
```

- Test Description:

- This test is a Unit Test for the crow swig classes. It tests that the MultiVariate Normal distribution is accessible by Python and that PCA is correctly performed and that the back transformation is correctly implemented
- Original Author:
 - coglj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.690 CROW.TEST INVERSEMARGINALFORPCA

This test can be found at “./raven/tests/crow/test_inverseMarginalForPCA.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_inverseMarginalforPCA
```

or

```
./run_framework_tests --re=crow.test_inverseMarginalforPCA
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the MultiVariate Normal distribution is accessible by Python and that PCA is correctly performed and that the inverse marginal distribution is computable in the transformed space
- Original Author:
 - coglj

- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.691 CROW.TEST CELLPROBABILITYWEIGHT

This test can be found at “./raven/tests/crow/test_cellProbabilityWeight.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_cellProbabilityWeight
```

or

```
./run_framework_tests --re=crow.test_cellProbabilityWeight
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the MultiVariate Normal distribution is accessible by Python and that the probability weights (cell probability) is correctly computed.
- Original Author:
 - coglj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : alfoa
- date : 2018-05-15
- description: Adding this test description.

2.3.692 CROW.TEST MARGINALCDFFORPCA

This test can be found at “./raven/tests/crow/test_marginalCdfForPCA.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_marginalCdfForPCA
```

or

```
./run_framework_tests --re=crow.test_marginalCdfForPCA
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the MultiVariate Normal distribution is accessible by Python and that PCA is correctly performed and that the CDF marginal distribution is computable in the transformed space
- Original Author:
 - cogljj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.693 CROW.TEST TRANSFORMATIONMATRIX

This test can be found at “./raven/tests/crow/test_transformationMatrix.py”.

This test can be called executing the following command:

```
./run_tests --re=crow.test_transformationMatrix
```

or

```
./run_framework_tests --re=crow.test_transformationMatrix
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the MultiVariate Normal distribution is accessible by Python and that transformation matrix is accessible and correctly computed.
- Original Author:
 - coglj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.694 CROW.TEST SVD INDEX

This test can be found at “./raven/tests/crow/test_svd_index.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_svd_index
```


or

```
./run_framework_tests --re=crow.test_svd_index
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the MultiVariate Normal distribution is accessible by Python and that the SVD indexes are accessible
- Original Author:
 - cogljj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.695 CROW.TEST TRANSFORMATIONMATRIX INDEX

This test can be found at “./raven/tests/crow/test_transformationMatrix_index.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_transformationMatrix_index
```

or

```
./run_framework_tests --re=crow.test_transformationMatrix_index
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the MultiVariate Normal distribution is accessible by Python and that transformation matrix indexes are accessible and correctly reported.

- Original Author:
 - cogljj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:
 - crow
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : alfoa
 - date : 2018-05-15
 - description: Adding this test description.

2.3.696 CROW.TEST INVERSE TRANSFORMATIONMATRIX

This test can be found at “./raven/tests/crow/test_inverse_transformation_matrix.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_inverse_transformationMatrix
```

or

```
./run_framework_tests --re=crow.test_inverse_transformationMatrix
```

- Test Description:
 - This test is a Unit Test for the crow swig classes. It tests that the MultiVariate Normal distribution is accessible by Python and that the inverse transformation matrix is correctly computed.
- Original Author:
 - cogljj
- Creation date:
 - 2017-03-24
- The classes tested in this test are:

- crow

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : alfoa
- date : 2018-05-15
- description: Adding this test description.

2.3.697 CROW.TEST INVERSE TRANSFORMATIONMATRIX

This test can be found at “./raven/tests/crow/test_symmetric_psd.py”. This test can be called executing the following command:

```
./run_tests --re=crow.test_inverse_transformationMatrix
```

or

```
./run_framework_tests --re=crow.test_inverse_transformationMatrix
```

- Test Description:

- This test is a Unit Test for the crow swig classes. It tests that the MultiVariate Normal distribution is accessible by Python and that the left singular vectors are correctly reported

- Original Author:

- cogljj

- Creation date:

- 2017-03-24

- The classes tested in this test are:

- crow

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : alfoa
- date : 2018-05-15
- description: Adding this test description.

2.3.698 DOC WORKSHOP OPTIMIZER INPUTS.OPTIMIZER

This test can be found at “./raven/doc/workshop/optimizer/Inputs/1_optimize.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/optimizer/Inputs.optimizer
```

or

```
./run_framework_tests --re=doc/workshop/optimizer/Inputs.optimizer
```

- Test Description:
 - Workshop test: test Optimizer capability
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Samplers.Optimizer

2.3.699 DOC WORKSHOP STATICDATAANALYSIS INPUTS.DMGM1

This test can be found at “./raven/doc/workshop/staticDataAnalysis/inputs/t.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/staticDataAnalysis/inputs.dmGM1
```

or

```
./run_framework_tests --re=doc/workshop/staticDataAnalysis/inputs.dmGM1
```

- Test Description:
 - Workshop test: DataMining with Gaussian Process
- Original Author:

- wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - PostProcessors.DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.700 DOC WORKSHOP STATICDATAANALYSIS INPUTS.DMICA

This test can be found at “./raven/doc/workshop/staticDataAnalysis/inputs/test_dataMiningExactICA.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/staticDataAnalysis/inputs.dmICA
```

or

```
./run_framework_tests --re=doc/workshop/staticDataAnalysis/inputs.dmICA
```

- Test Description:
 - Workshop test: DataMining with ICA method
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:

- PostProcessors.DataMining

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc

- date : 2018-09-27

- description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.701 DOC WORKSHOP STATICDATAANALYSIS INPUTS.DMICA

This test can be found at “./raven/doc/workshop/staticDataAnalysis/inputs/test_dataMiningExactPCA.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/staticDataAnalysis/inputs.dmICA
```

or

```
./run_framework_tests --re=doc/workshop/staticDataAnalysis/inputs.dmICA
```

- Test Description:

- Workshop test: DataMining with ICA method

- Original Author:

- wangc

- Creation date:

- 2018-09-21

- The classes tested in this test are:

- PostProcessors.DataMining

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : wangc

- date : 2018-09-27
- description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.702 DOC WORKSHOP STATICDATAANALYSIS INPUTS.DMGM2

This test can be found at “./raven/doc/workshop/staticDataAnalysis/inputs/test_dataMiningGaussianMixture.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/staticDataAnalysis/inputs.dmGM2
```

or

```
./run_framework_tests --re=doc/workshop/staticDataAnalysis/inputs.dmGM2
```

- Test Description:
 - Workshop test: DataMining with Gaussian Mixture method
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - PostProcessors.DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.703 DOC WORKSHOP STATICDATAANALYSIS INPUTS.KMEANS

This test can be found at “./raven/doc/workshop/staticDataAnalysis/inputs/test_dataMiningKMeans.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/staticDataAnalysis/inputs.KMeans
```

or

```
./run_framework_tests --re=doc/workshop/staticDataAnalysis/inputs.KMeans
```

- Test Description:
 - Workshop test: DataMining with KMeans method
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - PostProcessors.DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.704 DOC WORKSHOP STATICDATAANALYSIS INPUTS.MEANSHIFT

This test can be found at “./raven/doc/workshop/staticDataAnalysis/inputs/test_dataMiningMeanShift_complete.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/staticDataAnalysis/inputs.MeanShift
```


or

```
./run_framework_tests --re=doc/workshop/staticDataAnalysis/inputs.MeanShift
```

- Test Description:
 - Workshop test: DataMining with MeanShift method
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - PostProcessors.DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.705 DOC WORKSHOP ADVANCEDRELIABILITY EXERCISES INPUTS.ADAPT

This test can be found at “./raven/doc/workshop/advancedReliability/exercises/Inputs/1_adaptive_sampling.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/advancedReliability/exercises/Inputs.Adapt
```

or

```
./run_framework_tests --re=doc/workshop/advancedReliability/exercises/Inputs
```

- Test Description:

- Workshop test: advanced reliability test using Limit Surface Search
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Sampler.LimitSurfaceSearch

2.3.706 DOC WORKSHOP ADVANCEDRELIABILITY EXERCISES INPUTS.LS

This test can be found at “./raven/doc/workshop/advancedReliability/exercises/Inputs/2_ls_probability_computation.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/advancedReliability/exercises/Inputs.LS
```

or

```
./run_framework_tests --re=doc/workshop/advancedReliability/exercises/Inputs.LS
```

- Test Description:
 - Workshop test: advanced reliability test using Limit Surface Integral PostProcessor
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - PostProcessor.LimitSurfaceIntegral

2.3.707 DOC WORKSHOP ADVANCEDRELIABILITY INPUTS.DPRA

This test can be found at “./raven/doc/workshop/advancedReliability/inputs/dynamicPRA.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/advancedReliability/inputs.dPRA
```

or

```
./run_framework_tests --re=doc/workshop/advancedReliability/inputs.dPRA
```

- Test Description:
 - Workshop test: advanced reliability test using dynamic PRA
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - None
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-12-18
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwised metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.708 DOC WORKSHOP ADVANCEDRELIABILITY INPUTS.RUNLS

This test can be found at “./raven/doc/workshop/advancedReliability/inputs/runLS.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/advancedReliability/inputs.runLS
```

or

```
./run_framework_tests --re=doc/workshop/advancedReliability/inputs.runLS
```

- Test Description:
 - Workshop test: advanced reliability test with Limit surface search
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - None

2.3.709 DOC WORKSHOP ADVANCEDRELIABILITY INPUTS.RUNLS

This test can be found at “./raven/doc/workshop/advancedReliability/inputs/pbFromLS.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/advancedReliability/inputs.runLS
```

or

```
./run_framework_tests --re=doc/workshop/advancedReliability/inputs.runLS
```

- Test Description:
 - Workshop test: advanced reliability test with Limit surface integral postprocessor
- Original Author:
 - wangc
- Creation date:

– 2018-09-21

- The classes tested in this test are:
 - None

2.3.710 DOC WORKSHOP ENSEMBLEMODELS INPUTS ENSEMBLEEXAMPLE.ENSEMBLE

This test can be found at “./raven/doc/workshop/ensembleModels/inputs/ensembleExample/1_ensemble_model.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/ensembleModels/inputs/ensembleExample.ensembl
```

or

```
./run_framework_tests --re=doc/workshop/ensembleModels/inputs/ensembleExamp
```

- Test Description:
 - Workshop test: test EnsembleModel Capability
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.EnsembleModel

2.3.711 DOC WORKSHOP ENSEMBLEMODELS INPUTS HYBRIDEXAMPLE.HYBRID

This test can be found at “./raven/doc/workshop/ensembleModels/inputs/hybridExample/test_hybrid_model.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/ensembleModels/inputs/hybridExample.hybrid
```

or

```
./run_framework_tests --re=doc/workshop/ensembleModels/inputs/hybridExamp
```

- Test Description:
 - Workshop test: test HybridModel Capability
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.HybridModel

2.3.712 DOC WORKSHOP STOCHASTICCOLLOCATION INPUTS.SCTRAIN1

This test can be found at “./raven/doc/workshop/stochasticCollocation/inputs/scgpc_trainer_1.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/stochasticCollocation/inputs.scTrain1
```

or

```
./run_framework_tests --re=doc/workshop/stochasticCollocation/inputs.scTra
```

- Test Description:
 - Workshop test: using sthochastic collocation sampler to train and evaluate a Gaussian Polynomial ROM
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM
- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : talbpaul
- date : 2019-01-08
- description: moved from ROM- ζ XML to ROM- ζ DataObject

2.3.713 DOC WORKSHOP STOCHASTICCOLLOCATION INPUTS.SCTRAIN2

This test can be found at “./raven/doc/workshop/stochasticCollocation/inputs/scgpc_trainer_2.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/stochasticCollocation/inputs.scTrain2
```

or

```
./run_framework_tests --re=doc/workshop/stochasticCollocation/inputs.scTra
```

- Test Description:

- Workshop test: using sthochastic collocation sampler to train and evaluate a Gaussian Polynomial ROM

- Original Author:

- wangc

- Creation date:

- 2018-09-21

- The classes tested in this test are:

- Models.ROM

- Since the creation of this test, the following main revisions have been performed:

1. revision info:

- author : talbpaul
- date : 2019-01-08
- description: moved from ROM- ζ XML to ROM- ζ DataObject

2.3.714 DOC WORKSHOP STOCHASTICCOLLOCATION INPUTS.SCTRAIN3

This test can be found at “./raven/doc/workshop/stochasticCollocation/inputs/scgpc_trainer_3.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/stochasticCollocation/inputs.scTrain3
```

or

```
./run_framework_tests --re=doc/workshop/stochasticCollocation/inputs.scTra
```

- Test Description:
 - Workshop test: using sthochastic collocation sampler to train and evaluate a Gaussian Polynomial ROM
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : talbpaul
 - date : 2019-01-08
 - description: moved from ROM-¿XML to ROM-¿DataObject

2.3.715 DOC WORKSHOP TIMEDEPDATA MINING INPUTS.BSTAT T

This test can be found at “./raven/doc/workshop/timeDepDataMining/inputs/time_dep.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/timeDepDataMining/inputs.bstatT
```

or


```
./run_framework_tests --re=doc/workshop/timeDepDataMining/inputs.bstatT
```

- Test Description:
 - Workshop test: Time dependent basic statistics analysis
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - PostProcessors.BasicStatistics
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-12-18
 - description: In PR #882, the standard errors on statistics moments are implemented, these quantities are stored in the pointwised metadata, and will be printed out in the output csv files by default. In order to avoid regolding this test, the optional node 'what' with text values 'input, output' is added. In this case, only the user requested variables as specified in the DataObjects are printed out.

2.3.716 DOC WORKSHOP TIMEDEPDATA MINING INPUTS.KMEANST

This test can be found at “./raven/doc/workshop/timeDepDataMining/inputs/timeSliceKMeans.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/timeDepDataMining/inputs.KMeansT
```

or

```
./run_framework_tests --re=doc/workshop/timeDepDataMining/inputs.KMeansT
```

- Test Description:

- Workshop test: Time dependent data mining with KMeans analysis
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - PostProcessors.DataMining
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.717 DOC WORKSHOP TIMEDEP DATAMINING INPUTS.DTW

This test can be found at “./raven/doc/workshop/timeDepDataMining/inputs/TD_hierarchical_dtw.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/timeDepDataMining/inputs.DTW
```

or

```
./run_framework_tests --re=doc/workshop/timeDepDataMining/inputs.DTW
```

- Test Description:
 - Workshop test: Time dependent data mining with DTW metric analysis
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21

- The classes tested in this test are:
 - PostProcessors.DataMining, Metrics.DTW
- Since the creation of this test, the following main revisions have been performed:
 1. revision info:
 - author : wangc
 - date : 2018-09-27
 - description: As reported in issue #805, RAVEN will not allow input DataObject of PostProcessor to be output DataObject, the output data object will be renamed, and the variable name of labels will be explicitly defined.

2.3.718 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SAMPLE

This test can be found at “./raven/doc/workshop/reducedOrderModeling/inputs/examples/1_sample_Function.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sample
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examp1
```

- Test Description:
 - Workshop test: simple sampler test
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - None

2.3.719 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.TRAIN

This test can be found at “./raven/doc/workshop/reducedOrderModeling/inputs/examples/2_train_rom.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.train
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/example
```

- Test Description:
 - Workshop test: train a ROM
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.720 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.PICKLE

This test can be found at “./raven/doc/workshop/reducedOrderModeling/inputs/examples/3_pickle_rom.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.pickle
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/example
```

- Test Description:
 - Workshop test: pickle a ROM
- Original Author:

- wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.721 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.LOAD

This test can be found at “./raven/doc/workshop/reducedOrderModeling/inputs/examples/4_load_rom.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.load
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examples
```

- Test Description:
 - Workshop test: load a pickled ROM
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.722 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SROM

This test can be found at “./raven/doc/workshop/reducedOrderModeling/inputs/examples/5_sample_rom.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.srom
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examples
```

- Test Description:
 - Workshop test: sample a trained rom
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.723 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SPROM

This test can be found at “./raven/doc/workshop/reducedOrderModeling/inputs/examples/6_sample_prom.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sprom
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examples
```

- Test Description:
 - Workshop test: sample a pickled rom
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.724 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.EVAL

This test can be found at “./raven/doc/workshop/reducedOrderModeling/inputs/examples/7_evaluate_rom.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.eval
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examp1
```

- Test Description:
 - Workshop test: use rom for prediction
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.725 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SC

This test can be found at “./raven/doc/workshop/reducedOrderModeling/inputs/examples/9_sc_gpc.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examp1
```

- Test Description:
 - Workshop test: Using Stochastic Collocation to train a Gaussian Polynomial ROM

- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.726 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SC

This test can be found at “./raven/doc/workshop/forwardSampling/Inputs/test_1_sample_and_plot.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

- Test Description:
 - Workshop test: Using Stochastic Collocation to train a Gaussian Polynomial ROM
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.727 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SC

This test can be found at “./raven/doc/workshop/forwardSampling/Inputs/test_2_normal_distribution.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

- Test Description:
 - Workshop test: Using Stochastic Collocation to train a Gaussian Polynomial ROM
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.728 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SC

This test can be found at “./raven/doc/workshop/forwardSampling/Inputs/test_3_initial_height.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

- Test Description:
 - Workshop test: Using Stochastic Collocation to train a Gaussian Polynomial ROM
- Original Author:

- wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.729 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SC

This test can be found at “./raven/doc/workshop/forwardSampling/Inputs/test_4_grid_sampler.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

- Test Description:
 - Workshop test: Using Stochastic Collocation to train a Gaussian Polynomial ROM
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.730 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SC

This test can be found at “./raven/doc/workshop/forwardSampling/Inputs/test_5_basic_stats.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examples
```

- Test Description:
 - Workshop test: Using Stochastic Collocation to train a Gaussian Polynomial ROM
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.731 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SC

This test can be found at “./raven/doc/workshop/forwardSampling/Inputs/test_6_point_sets.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examples
```

- Test Description:
 - Workshop test: Using Stochastic Collocation to train a Gaussian Polynomial ROM
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.732 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SC

This test can be found at “./raven/doc/workshop/forwardSampling/Inputs/test_7_history_sets.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

- Test Description:
 - Workshop test: Using Stochastic Collocation to train a Gaussian Polynomial ROM
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.733 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SC

This test can be found at “./raven/doc/workshop/forwardSampling/Inputs/test_8_history_sync.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

- Test Description:
 - Workshop test: Using Stochastic Collocation to train a Gaussian Polynomial ROM
- Original Author:

- wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.734 DOC WORKSHOP REDUCEDORDERMODELING INPUTS EXAMPLES.SC

This test can be found at “./raven/doc/workshop/forwardSampling/Inputs/test_9_time_stats.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

or

```
./run_framework_tests --re=doc/workshop/reducedOrderModeling/inputs/examples.sc
```

- Test Description:
 - Workshop test: Using Stochastic Collocation to train a Gaussian Polynomial ROM
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.ROM

2.3.735 DOC WORKSHOP CODECOUPLING EXERCISES.CODEINTERFACE

This test can be found at “./raven/doc/workshop/codeCoupling/exercises/sample_new_code_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/codeCoupling/exercises.codeInterface
```

or

```
./run_framework_tests --re=doc/workshop/codeCoupling/exercises.codeInterface
```

- Test Description:
 - Workshop test: test code coupling with projectile model
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.Code

2.3.736 DOC WORKSHOP CODECOUPLING INPUT.GENERICINTERFACE

This test can be found at “./raven/doc/workshop/codeCoupling/inputs/example_using_generic_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/codeCoupling/input.genericInterface
```

or

```
./run_framework_tests --re=doc/workshop/codeCoupling/input.genericInterface
```

- Test Description:
 - Workshop test: test code coupling with Projectile model using generic code interface
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.Code

2.3.737 DOC WORKSHOP CODECOUPLING INPUT.BATEMANINTERFACE

This test can be found at “./raven/doc/workshop/codeCoupling/inputs/example_using_new_interface.xml”. This test can be called executing the following command:

```
./run_tests --re=doc/workshop/codeCoupling/input.batemanInterface
```

or

```
./run_framework_tests --re=doc/workshop/codeCoupling/input.batemanInterface
```

- Test Description:
 - Workshop test: test code coupling with Projectile model using bateman code interface
- Original Author:
 - wangc
- Creation date:
 - 2018-09-21
- The classes tested in this test are:
 - Models.Code

3 Undocumented tests

Currently, There are 12 undocumented tests:

1. **Folder:** /Users/wangc/projects/raven/plugins/SR2ML/tests/maintenanceModels.
Tests:
 - ./raven/plugins/SR2ML/tests/maintenanceModels/test_PMmodel_operating.xml
 - ./raven/plugins/SR2ML/tests/maintenanceModels/test_PMmodel_standby.xml
2. **Folder:** /Users/wangc/projects/raven/plugins/LOGOS/tests/MilestoneTestsSept
use_case_II. **Tests:**
 - ./raven/plugins/LOGOS/tests/MilestoneTestsSeptFY19/use_case_II/raven_capital_budgeting_II.xml
3. **Folder:** /Users/wangc/projects/raven/plugins/HERON/tests/unit_tests.
Tests:
 - ./raven/plugins/HERON/tests/unit_tests/testComponent.py
4. **Folder:** /Users/wangc/projects/raven/plugins/HERON/tests/unit_tests/
ValuedParams. **Tests:**
 - ./raven/plugins/HERON/tests/unit_tests/ValuedParams/testParametric.py
5. **Folder:** /Users/wangc/projects/raven/plugins/TEAL/tests. **Tests:**
 - ./raven/plugins/TEAL/tests/HourlyObjectOrientedTest.py
6. **Folder:** /Users/wangc/projects/raven/tests/framework/unit_tests/utils.
Tests:
 - ./raven/tests/framework/unit_tests/utils/testFrontUtils.py
7. **Folder:** /Users/wangc/projects/raven/tests/framework/unit_tests/Optimizers.
Tests:
 - ./raven/tests/framework/unit_tests/Optimizers/testFiniteDifference.py
8. **Folder:** /Users/wangc/projects/raven/tests/framework/ROM/pickleTests.
Tests:

- `./raven/tests/framework/ROM/pickleTests/script_rom_loader.py`

9. **Folder:** `/Users/wangc/projects/raven/tests/framework/InputTemplates`.
Tests:

- `./raven/tests/framework/InputTemplates/uq_maker.py`

10. **Folder:** `/Users/wangc/projects/raven/tests/reg_self_tests`. **Tests:**

- `./raven/tests/reg_self_tests/test_ordered_csv.py`

11. **Folder:** `/Users/wangc/projects/raven/doc/workshop/forwardSampling/Inputs`. **Tests:**

- `./raven/doc/workshop/forwardSampling/Inputs/AssembleTests.py`

