OpenTURNS developers training: agenda
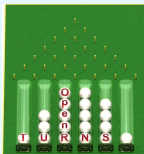
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Developers training

The developers training

Objectives

This 4 days training will give you the first elements to:

- Understand the OpenTURNS aim and architecture,
- Discover the coding rules, the development process and the associated infrastructure,
- Discover the OpenTURNS modules mechanism,
- Make your first steps in the OpenTURNS development by adding a new specialization of an existing concept both in the C++ library and the Python interface,
- Make your first steps in the OpenTURNS module development.

General organization

Agenda

Each of these four days will be organized as follow:

    10.00am Welcome (coffee & tea)

    10.15am Theory

    12.30pm Lunch

    13.30pm Theory or experimentation

    15.30pm Break (coffee & tea)

    15.45pm Experimentation

    18.00pm End of the day

Day 1: uncertainties, OpenTURNS platform, architecture

- Uncertainties: quick reminder on analysis, probability and statistics
- OpenTURNS platform: the global picture of OpenTURNS product and the website, short presentation of the development life-cycle.
- Architecture: the general organization of the product with some highlights on the key mechanisms and their implementation.
- Experimentation: basic manipulation of a numerical function and a probability distribution, navigation in the website (tickets, versioning system), exploration of examples en C++ and python.

Day by day...

Day 2: development in the C++ library

- The development infrastructure: some elements on autotools and CMake.
- The development process: use cases, architecture, C++ implementation, tests, documentation.
- Practical case: add a new distribution to the library.

Day 3: make the development visible in python

- Interfacing C++ and Python using SWIG.
- The development process: SWIG interface, python modules, tests, documentation.
- Practical case: make the new distribution visible within the OpenTURNS Python module.

Day 4: create an OpenTURNS module

- The concept of module, its standard structure.
- The key steps in the development of a module.
- How to install and use a module?
- Practical case: add a new distribution as a module.

Already a contributor

You are a new OpenTURNs developer!

- All the developments made during this training session will become part of OpenTURNS sooner or later, depending on their degree of maturity (quality ;) ?).
- The missing steps for a direct integration will be the testing phase, the validation phase and the documentation phase.
- The integration will be done using a development branch on GitHub.

Check the upcoming release or the next to see your work in action!