

# **Technical Meeting on the Development and Application of Open-Source Modelling and Simulation Tools for Nuclear Reactors**

**Monday, 20 June 2022 - Friday, 24 June 2022**

**Milano, Italy**

## **Scientific Programme**

The IAEA encourages participants to give presentations on the work of their respective institutions that falls under the topics listed below. Participants who wish to give presentations are requested to submit an extended abstract of their work on the session topics listed below.

To best serve the purpose of the meeting, authors submitting to Technical Sessions 2 and 3 are asked to emphasize at least 2 of the following cross-cutting topics in their submissions.

Motivations for the open-source approach;

Unique open-source issues, including licensing, distribution, long-term maintenance, developer/user interactions, etc.;

Best practices in nuclear open-source projects, including documentation, requirements management, testing, continuous integration, etc.

The event will consist of some keynote speeches, general sessions and technical sessions. All contributions, presentations and discussions will be categorized based on the following topics (examples are given for some topics to facilitate participants with session selection):

## **Technical Session 1: Motivations, experiences, and challenges for the open-source approach**

e.g., programmatic descriptions of why the open-source path was taken, user and developer experiences, new collaboration possibilities, programmatic efficiency gains, export control, etc.

## **Technical Session 2: Advanced application of open-source tools to nuclear engineering problems**

e.g., use of available open-source tools for technical problems of interest in the nuclear field, verification and validation of open-source tools, numerical benchmarks, etc.

## **Technical Session 3: Recent developments in open-source tools**

e.g., new developments, extension of available tools, coupling between tools, coupling interfaces, performance enhancements, etc.

## **Technical Session 4: Collaborative initiatives on the development of open-source codes**

e.g., national and international initiatives, multilateral collaborations, collaboration frameworks, unique synergies, etc.

## **General Session 1: Motivation, experiences, and challenges for the open-source approach**

e.g., code development strategies and tools, project management, quality assurance, documentation, continuous integration, developer/user interactions, requirements for public distribution, means of interoperability with other codes, etc.

## **General Session 2: Open-source software for education and training**

e.g., use of modelling tools to demonstrate physical phenomena, hands-on training based on open-source tools, development/modification of open-source codes by the students, use of open-source software for graduate student projects. ability with other codes, etc.

## **General Session 3: Vision and path forward for open-source software to serve the nuclear community**