Joint ICTP-IAEA Workshop on Open-Source Nuclear Codes for Reactor Analysis

7 - 11 August 2023
An ICTP - IAEA Hybrid Meeting
Trieste, Italy

Further information:
http://indico.ictp.it/event/10199/
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This workshop offers a comprehensive journey in cutting-edge computational techniques for nuclear reactor analysis, providing an in-depth understanding of reactor neutronics, thermal hydraulics and system analysis at different scales. Participants will be led through the essential stages required to conduct engineering-level multi-physics simulations.

Description:

The open-source movement is expanding and extending substantial assistance to all nations by using such advantages as lower starting cost, more flexibility in software development, robust community-driven support, and easier license management, without being contractually locked to a single vendor. To aid the progress and implementation of open-source multi-physics simulation tools for the examination of advanced nuclear power reactors, the IAEA has launched the Open-Source Nuclear Codes for Reactor Analysis (ONCORE) initiative, which includes various scheduled events. This workshop will prove beneficial to both developed and developing countries, as it will benefit institutions and individual users alike, by providing research, education, and training opportunities.

Active discussions, group activities, poster sessions and various mixed learning approaches will be used to share knowledge and new ideas between recognized experts in the field of open-source tools for nuclear reactors and workshop participants.

Topics:

General overview, theoretical background and practical exercises will be offered for:

- OpenFOAM and its derivatives for CFD simulation of multi-physics and multi-scale problems

- GenFOAM for core thermal hydraulics, neutron transport and structural mechanics modelling

- Offbeat for fuel performance simulation

- Containment FOAM for severe accidents simulation

- OpenMC Monte-Carlo neutron transport

- MOOSE parallel finite element framework for multi-physics, multi-scale simulations

- ARMI Advanced Reactor Modelling Interface

Directors:

V. KRIVENTSEV, IAEA
N. MORELOVA, IAEA

Local Organiser:

N. SERIANI, ICTP

Lecturers:

J. CHOE, Korea Atomic Energy Research Institute, Republic of Korea
C. FIORINA, Texas A&M University, USA
S. KELM, Forschungszentrum Jülich, Germany
S. LORENZI, Politecnico di Milano, Italy
A. SCOLARO, École Polytechnique Fédérale de Lausanne, Switzerland
P. SHRIWISE, Argonne National Laboratory, USA

In the application form, all applicants are requested to submit a brief abstract for a poster presentation on the topic of their research or interest in the area of the numerical simulations of nuclear reactors. During the workshop, participants will present their works at the poster sessions.
Certificates of recognition and a cash prize will be awarded to three individuals with best posters.

How to apply:

Online application:
http://indico.ictp.it/event/10199/

Female scientists are encouraged to apply.

Grants:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries.
There is no registration fee.

Deadline:

For applicants requesting financial and/or visa support:
31 May 2023

For all other applicants:
15 July 2023