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Call for Abstracts

SWINTH-2024

Specialist Workshop on Advanced Instrumentation and
Measurement Techniques for Nuclear Reactor
Thermal-Hydraulics and Severe Accidents

17-20 June 2024, Dresden, Germany



Co-organized by:

OECD/NEA CSNI/WGAMA

Organisation for Economic Co-operation and
Development / Nuclear Energy Agency – Committee
for the Safety of Nuclear Installations / Working
Group on the Analysis and Management of Accidents

SILENCE Network

Significant Light & Heavy Water Reactor
Thermal-Hydraulic Experiments Network for the
Consistent Exploitation of the Data

Local hosting and organization by: Helmholtz-Zentrum Dresden-Rossendorf (HZDR)

Important dates¹

Abstracts due	17 September 2023
Notification of abstract acceptance	30 October 2023
Draft full-length paper due	31 January 2024
Notification of paper acceptance	31 March 2024
Early registration	17 March 2024
Final paper due	15 May 2024
Workshop	17 - 20 June 2024



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¹ Deadlines may be extended. Please check our website regularly.

Background, Scope and Objectives of the Workshop

SWINTH-2024 is meant to create an opportunity for scientists and technologists to discuss recent achievements and future needs in the development and application of advanced measurement instrumentation and techniques for thermal-hydraulics and severe accident research, and for accident management to provide data related to progression of an accident including long-term management of an accident. The scope of the workshop includes the following topics and aspects:

- experimental studies and instrumentation for water-cooled nuclear reactor accident phenomena;
- specific instrumentation for reactor circuit and containment;
- experimental studies with instrumentation for advanced and innovative reactors (SMR, GEN-IV);
- scale and complexity of experiments and phenomena, understanding of phenomena and processes;
- innovations in the measurement of local and/or space-averaged instantaneous and/or time averaged quantities of single-phase and/or multi-phase/multi-component flows with sufficiently fine resolution and uncertainty quantification;
- use of simulant fluids with well-established scaling laws;
- applicability of experiments and instrumentation to validation and development of different types of computer code (i.e., system codes, sub-channel codes, CFD, etc.);
- gaps between current model/code validation needs and existing technology; definition of requirements for new experiments and instrumentation in terms of “quality” of data;
- measurement uncertainty evaluation depending on type of instruments and measurement method with possible influences of TH and/or SA phenomena to simulate;
- use of machine learning (ML) and artificial intelligence (AI) methods for data analyses;
- issues related to the utilization, handling and preservation of experimental data;
- specifically concerning instruments for SA-related experiments: major challenges and solutions, improvements and advancements, being proposed, under development and/or already in use, including those in the light of lessons-learned from Fukushima-Daiichi accident and its recovery/decommissioning.

This workshop follows up earlier Specialists Workshops (WSs) on Advanced Instrumentation and Measurement Techniques for Nuclear Reactor Thermal Hydraulics (SWINTH), held in Livorno, Italy, in June 2016, organized by SILENCE Network, the follow-up SWINTH-2019 with broader scope than 2016 by including severe accidents, held in Livorno, Italy, in October 2019, jointly organized by SILENCE Network and WGAMA, and more recently the OECD/NEA Specialist WS SAMMI-2020 on Advanced Measurement Method and Instrumentation for enhancing Severe Accident Management in an NPP addressing Emergency, Stabilization and Long-term Recovery Phases, held online from Tokai, Japan, in December 2020. SWINTH-2024 combines the respective experiences and roles of OECD/NEA-CSNI/WGAMA and SILENCE Network in a joint organizational effort on a common goal.

Expected Outcomes

The workshop is aimed at enhancing scientific and technological exchanges through keynote lectures, technically sound presentations, fostering of discussions during technical sessions and foreseen panels and, no less important, attendees networking. More specifically, the workshop will:

- provide input to the improvement of instrumentation and measurement techniques;
- support the establishment of a shared knowledge and expertise basis;
- produce reference material for a NEA summary report, as a result of open discussions and synthesis of technical sessions by organizers and chairpersons;
- allow selection of papers to be recommended for publication on relevant journals.

Website and Contact

<https://www.swinth2024.org/>

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