

NURETH-17



Call for Paper

Abstract Due: Dec. 15, 2016
Final Paper Due: Feb. 28, 2017

<http://www.nureth17.com/>

NURETH-17 Special Topic

Measurement and Instrumentation for Thermal-Hydraulic Experiments

Thermal-hydraulics is a key element of Nuclear Safety. For the improvement of nuclear safety, advanced measurement techniques and instrumentation development are strongly needed. Current progress in the field of thermal fluid dynamic instrumentation and special experimental techniques will be discussed for future applications to Nuclear Safety, ranging from fundamental studies, the generation of data for code V&V, via Design Basis Accident simulations up to the study of Severe Accident phenomena. Special attention is given to methods with high temporal and spatial resolution. The measurement of distributed parameters over 2D and 3D domains is of particular interest, especially for the introduction of CFD modeling into Nuclear Safety, but also for the deep understanding of safety relevant phenomena.

As a contribution to the future improvement of nuclear safety coming, advanced measurement technique and instrumentation for thermal-hydraulic experiments will be discussed as the special topic of NURETH17.

Topics include, not limited to:

1. Electrical impedance probes and sensors (local/integral probes, wire-mesh sensors)
2. Laser techniques (PIV, LIF, LDA PDPA)
3. Optical probes (single, dual, multiple tip)
4. Optical imaging (use of visible, IR and UV light, attenuation and emission techniques)
5. Imaging and tomography with X-rays, gamma and neutron radiation (time averaged or ultra-fast, dual energy imaging)
6. Nuclear magnetic resonance
7. Measurements in opaque fluids (ultrasound)
8. Probes and sensors for rough ambients
9. Thermodynamic property measurements
10. Experimental studies on phase transition
11. Special experimental techniques to improve instrumentation access
12. Signal processing quantities (bubble size, interfacial area, velocities, statistics)
13. Uncertainty quantification and analyses

Paper Submission Link: <http://epsr.ans.org/meeting/?m=237>

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