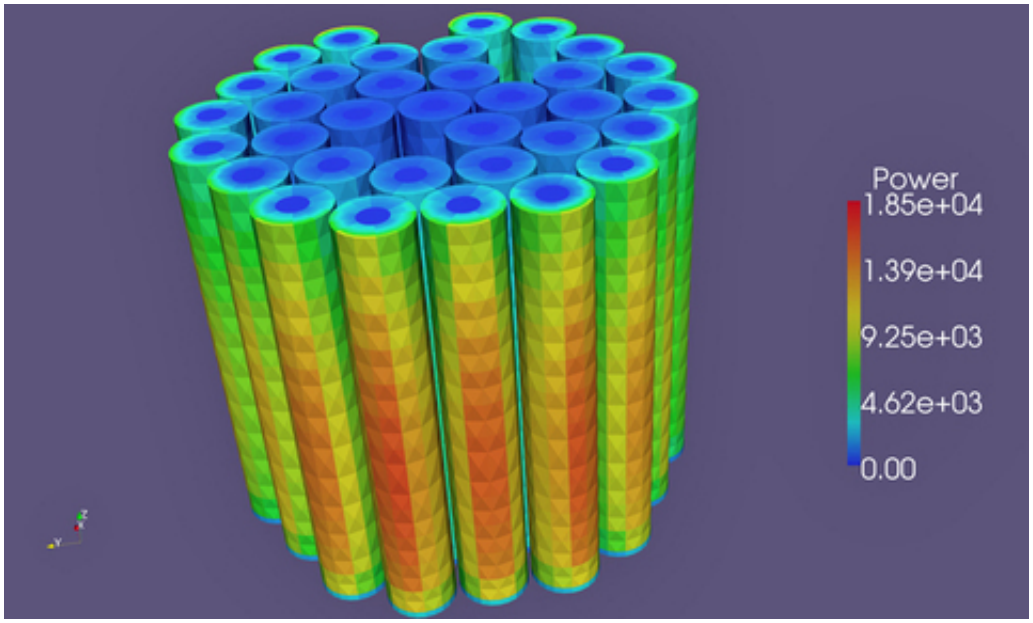
Thermal hydraulics and safety - International school in nuclear engineering

Reference: 964



OBJECTIVES

- Describe the various scales of two-phase flow modelling and their significance.
- Present the different formulations of the 1D two-phase flow modelling (number and nature of balance equations, set of dependent variables, closure laws).
- Give practical and relevant examples of thermal hydraulic models in the nuclear field.
- Identify and to discuss the major physical phenomena involved during design basis accident and severe accidents.
- Describe the different scenarios of core degradation and corium interactions during severe accidents.
- Present the hydrogen risk in LWRs.

PUBLIC

The doctoral course is designed for young researchers, PhD students, post-doctorates and engineers from nuclear industry companies, research centres, Universities, Technical Safety Organizations (TSO), regulatory bodies.

PREREQUISITES

Minimum background: Master of Science in Nuclear Engineering.

CONTENT

- Basic phenomena in single- and two-phase flow.
- Thermal hydraulic phenomena in LWRs.
- Multi-scale approach of LWR thermal hydraulics.
- System code modelling of reactor thermal hydraulics including advanced modelling.
- Simulation of LWR design basis accidents.
- Application of two-phase CFD to some reactor thermal hydraulic issues.
- Multiphase phenomena and modelling of severe accidents in LWRs.
- Hydrogen risk.

METHOD

Lectures and exercises.
A technical visit will be organized if possible (availability of experimental facilities).

Maximum number of trainees: 24.

COLLABORATION

CEA/DEN (Nuclear Energy Division)

PUBLIC PRICE - 2016

2300 €

DURATION - 2016

5 days (30 hours)

LOCATION AND DATE - 2016

Saclay
• 11-15 January 2016

COORDINATION - 2016

Education official(s) :

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CONTACT - 2016

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PUBLIC PRICE - 2017

2300 €

DURATION - 2017

5 days (30 hours)

LOCATION AND DATE - 2017

Saclay
• 9-13 January 2017

COORDINATION - 2017

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