

Reactor core physics: deterministic and Monte Carlo methods - International school in nuclear engineering

Reference: 966



OBJECTIVES

- Describe the neutron interactions in a nuclear reactor.
- Compare the deterministic and probabilistic methods for solving the neutron transport equation.
- Identify the main sources of uncertainties in a neutronic calculation (deterministic or probabilistic).

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

- Chain reaction and neutron balance.
- Transport equation and calculation schemes.
- Solving the steady-state integro-differential transport equation.
- Neutron slowing-down and resonance absorption.
- Verification & Validation of neutronics code packages. - The Monte Carlo method.
- Monte Carlo techniques. - Monte Carlo codes.
- Monte Carlo/Deterministic coupling and benchmarking.

METHOD

Lectures and exercises.

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

Cadarache

- 11-15 January 2016

COORDINATION - 2016

Education official(s) :

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PUBLIC PRICE - 2017

2300 €

DURATION - 2017

5 days (30 hours)

LOCATION AND DATE - 2017

Cadarache

- 16-20 January 2017

COORDINATION - 2017

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