M&C 2017
International Conference on Mathematics & Computational Methods
Applied to Nuclear Sciences & Engineering, April 16-20, 2017, Jeju, Korea

Special Session Description

Session Title: **Advanced Self-Shielding Methods for Multigroup Cross-Section Generation**

Subject Area: 6. General Reactor Analysis Methods and Applications

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Description

The generation of multigroup cross-sections is an important step for the multigroup calculations of the nuclear reactors. The accuracy of the multigroup cross sections determines the precision of the multigroup calculations. This special session will cover theoretical and computational aspects of multigroup cross sections:

- Benchmarks for self-shielding methods
- Resonance self-shielding methods for thermal and fast reactors
- Resonance self-shielding methods based on equivalence theory
- Resonance self-shielding methods based on mathematical or physical probability tables
- Ultrafine energy mesh calculations
- Resonance interference treatment
- Resonant up-scattering treatment
- Verification and validation of resonance self-shielding methods
- Optimization of the multigroup energy mesh
- Generation of multigroup cross sections

The session will involve mathematical modeling, deterministic or Monte Carlo numerical methods, and experimental applications that relate to the mathematical/numerical models.