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## Numerical Modelling of experiments performed at the OPAL research reactor

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The IAEA is currently administering an international Coordinated Research Project (CRP), the main purpose of which is to develop a set of research reactor benchmarks for the verification and validation of computational codes. The focus of the CRP in particular is the modelling of multi-cycle depletion. Necsa has recently developed a new calculational framework for performing nuclear reactor core calculations, which integrates both the stochastic and deterministic modeling methods in a consistent manner. In this work, the system is applied to the OPAL benchmark problem.

The OPAL reactor is a modern research reactor with challenging aspects in neutronic design. In particular, the use of burnable poisons and a heavy water reflector poses modeling challenges. Analysis conducted on this benchmark includes control rod calibration experiments as well as the simulation of seven actual operating cycles.

**Apply to be considered for a student award (Yes / No)?**

No

**Level for award (Hons, MSc, PhD, N/A)?**

N/A

**Would you like to submit a short paper for the Conference Proceedings (Yes / No)?**

Yes

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