8th Technical Workshop on Fuel Cycle Simulation (TWoFCS2027)

Wednesday, May 12, 2027 - Friday, May 14, 2027

CIEMAT, Madrid, Spain

Scientific Program

Simulator development, code ecosystem, and benchmarks

New fuel cycle codes and models, open-source tools, nuclear data, and code-to-code benchmarks.

AI/ML in fuel cycle simulation

Neural network surrogates, ML-assisted optimization and AI-supported workflows, with validation against physics-based codes.

Scenario analysis and energy systems

Transition and multi-recycling scenarios, robustness of strategies, nuclear growth including AI-driven electricity demand, and integration with renewables.

Advanced reactors and fuels

Fuel cycle modelling for fast reactors, SMRs, HALEU designs, molten salt reactors, and thorium and ATF.

Back end, economics, and decision-making

Repository footprint, waste forms, partitioning and transmutation. Fuel cycle costs, enrichment, and HALEU supply chain. Uncertainty, robustness, and social and policy aspects.