Contribution ID: **27**   Type: **POSTER**

TRANSMUTATION TRAJECTORY ANALYSIS IN THE MODELLING OF LFR FUEL CYCLE

Tuesday, 27 June 2017 17:30 (1h 30m)

The closed nuclear fuel cycle belongs to the most promising options
for the efficient usage of the nuclear energy resources with the full recycling of the long-lived transuranic elements. However, it can be implemented only in fast breeder reactors of generation IV. The paper shows our methodology applied to the analysis of lead-cooled fast reactor equilibrium fuel cycle with the application of the continuous energy Monte Carlo Burnup code –MCB. The implementation of novel modules for nuclear transmutation trajectories folding, allows us to trace the life cycle of crucial minor actinides from the reactor beginning of life to the state of adiabatic equilibrium. The numerical calculations were performed for the reactor core designed within the European Lead-cooled SYstem (ELSY) project and redefined in the follow-up Lead-cooled European Advanced DEmonstration Reactor (LEADER) project.

Country/Int. Organization

Poland

Primary author: Dr OETTINGEN, Mikołaj (AGH University of Science and Technology, Faculty of Energy and Fuels, Department of Nuclear Energy)

Co-authors: Mr KĘPISTY, Grzegorz (AGH University of Science and Technology, Faculty of Energy and Fuels, Department of Nuclear Energy); Prof. CETNAR, Jerzy (AGH University of Science and Technology, Faculty of Energy and Fuels, Department of Nuclear Energy); Mr STANISZ, Przemysław (AGH University of Science and Technology, Faculty of Energy and Fuels, Department of Nuclear Energy)

Presenter: Dr OETTINGEN, Mikołaj (AGH University of Science and Technology, Faculty of Energy and Fuels, Department of Nuclear Energy)

Session Classification: Poster Session 1

Track Classification: Track 4. Fuel Cycle: Sustainability, Environmental Considerations and Waste Management Issues