

Seminarium Studium Doktoranckiego NCBJ

Thursday, 30 April, 9:00

<https://www.gotomeet.me/NCBJmeetings/phd-seminar>

Speaker:

Jakub Sierchuła (Studium Doktoranckie NCBJ)

Title:

Negative temperature coefficients of reactivity for metallic fuel Dual Fluid Reactor

Abstract:

The Dual Fluid Reactor (DFR) is a novel concept of a very high-temperature (fast) reactor which falls-off the classification of Generation IV International Forum (GIF). DFR makes best of the two previous designs: Molten Salt Reactor (MSR) and Lead-cooled Fast Reactor (LFR). During the presentation a novel reactor design (DFRm) with the liquid eutectic U-Cr metal fuel composition and the lead coolant will be present. By performing the steady state neutronic calculations it will be shown that this 250 MWth reactor can operate almost 20 years without refuelling and has total temperature coefficient negative, which is an important factor of the passive safety. The influence of burnup and some small geometry changes on the main three investigated coefficients (fuel, coolant reflector) will also be presented.