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Advances in modeling of fast neutron induced fission on 232Th

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Nuclear data obtained in the neutron induced fission of 232Thorium are of a great importance for advanced fast reactors based on Th fuel cycle. Fission cross sections, mass and charge distributions, prompt emission in fission including neutron multiplicities, yields of some isotopes of interest, and associated uncertainties were obtained. This paper presents the theoretical predictions and the first results on 232Th(n,f) by applying Talys and an author's computer code for modelling of nuclear reaction mechanisms. Uncertainties induced by nuclear data were quantified using preliminary, energy-dependent relative covariance matrices evaluated with ENDF nuclear data and processed for the studied fission process. Theoretical evaluations obtained are compared with existing experimental data. The present researches on 232Th(n,f) reaction are realized in the frame of nuclear data program running at JINR basic facilities IREN and MT-25 Microtron.

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