

Abstract Submitted
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Improved Modeling of Prompt Fission Neutron Spectra for Nuclear Data Evaluations¹ DENISE NEUDECKER, PATRICK TALOU, TOSHIHIKO KAWANO, ALBERT C. KAHLER, MORGAN C. WHITE, Los Alamos National Laboratory — The prompt fission neutron spectra (PFNS) of major actinides such as ²³⁹Pu and ²³⁵U are quantities of interest for nuclear physics application areas including reactor physics and national security. Nuclear data evaluations provide recommended data for those application areas based on nuclear theory and experiments. Here, we present improvements made to the effective models predicting the PFNS up to incident neutron energies of 30 MeV and their impact on evaluations. These models describe relevant physics processes better than those used for the current US nuclear data library ENDF/B-VII.1. In addition, the use of higher-fidelity models such as Monte Carlo Hauser-Feshbach calculations will be discussed in the context of future PFNS evaluations. (LA-UR-15-24763)

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