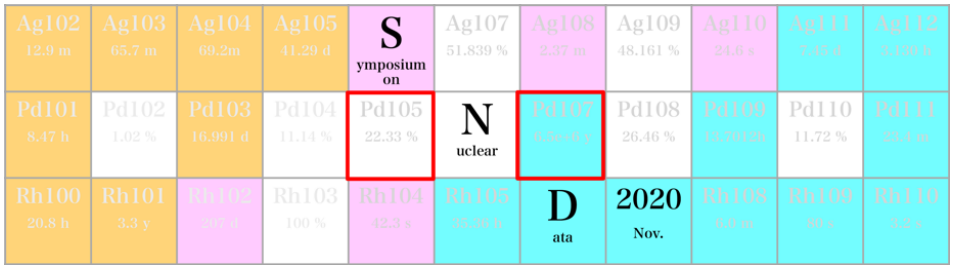

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Unified description of the fission probability for highly excited nuclei

Various spallation reaction models have been developed for the use of neutronic and shielding design of high-energy accelerator facilities such as J-PARC and ADS. However, their complicated theory for the de-excitation process has made improving their prediction accuracy difficult. In particular, it has been pointed out that the conventional models underestimate the yield of the spallation products produced from the fission reaction. This work has thus aimed to model the probability was described using a simpler, systematic expression, and then confirmed to predict fission cross sections for various incident energies and target nuclei with improved accuracy [1]. In this presentation, we will present a description of our model and research results.

[1] H. Iwamoto, S. Meigo, "Unified description of the fission probability for highly excited nuclei", Journal of Nuclear Science and Technology, 56:2, 160-171 (2020).

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