Abstract Submitted
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Recent Experimental Searches for Fission Isomers in U and Np Isotopes[1] P.N. PEPLOWSKI, J.A. CAGGIANO, C.F. FRANCY, D.V. JORDAN, J.J. RESSLER, G.A. WARREN, Pacific Northwest National Laboratory — Nuclei in the actinide mass region are subject to high deformations, which can produce a second minimum in the potential energy of the nucleus. Excited states within this second potential minimum are inhibited from decaying to the ground state and also have a small probability to decay via alpha emission, resulting in unusually long decay half-lives. These states are known as fission isomers, and despite the interest in these states they are largely unidentified for U and Np isotopes. An experimental search for these fission isomers was carried out using light ion reactions and neutrons on actinide targets. Gamma rays were detected in a high-purity germanium detector array surrounding the actinide target within varying time windows which were chosen based on theoretical predictions for the lifetimes of fission isomers of interest. Results from these experiments will be presented.

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