Abstract Submitted
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Cross sections of intermediate energy abrasion-fission fragments from cobalt to silver MICHAEL BOWRY[1], Michigan State University — Cross sections of A≈100 fission products have been measured across 21 isotopic chains from Z=27 (Co) to 47 (Ag) following in-flight fission of a uranium-238 beam at 80 MeV per nucleon. The uranium beam was fragmented upon an active diamond target located at the target positon of the S800 spectrograph and surrounded by the Gamma-Ray Energy Tracking Array (GRETINA). Fission products were identified on an event-by-event basis by correlating time-of-flight and energy-loss measurements in the S800 with in-flight gamma-decays reconstructed by GRETINA in the rest frame of the projectile (v/c ≈ 0.4). Transmission through the S800 was determined experimentally and from simulations performed using LISE++: the results of these techniques are compared. The cross sections shall form a valuable benchmark for the production of radioisotopes in phenomenological fission models at intermediate energies that rely on, for example, parameters extrapolated from high-energy fragmentation studies (>>100 MeV per nucleon). Three quarters of a century after the first description of fission decay, fission continues to serve as an insightful probe for nuclear spectroscopy through a variety of direct and indirect experimental methods.

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