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Measurement of the U-238/U-235 (n,f) cross-section ratio with the NIFFTE Time Projection Chamber[1] RHIANNON MEHARCHAND, Los Alamos National Laboratory, NIFFTE COLLABORATION — Nuclear data play a fundamental role in energy and defense related applications. In recent years, understanding of these systems has become dependent upon advanced simulation and modeling, where uncertainties in nuclear data propagate into calculated performance parameters. It is important therefore that nuclear data uncertainties are minimized and well-understood. To this end, the Neutron Induced Fission Fragment Tracking Experiment (NIFFTE) collaboration is developing a Time Projection Chamber (TPC) to measure energy-differential (n,f) cross sections with unprecedented precision. (n,f) cross-section measurements with the NIFFTE TPC take place at the Los Alamos Neutron Science Center (LANSCE) WNR facility, a spallation neutron source which provides a neutron spectrum ranging from hundreds of keV to hundreds of MeV. During the 2012 LANSCE run cycle, data were collected on several actinide samples, including U-238 and U-235. These data, along with those collected during the 2013 LANSCE run cycle, will be used to deduce a U-238/U-235 (n,f) cross-section ratio, to benchmark TPC performance, and to provide high-quality data to the community. A brief overview of the NIFFTE TPC and preliminary analysis of the U-238/U-235 (n,f) ratio data will be presented.

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