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Fission cross section uncertainties with the NIFFTE TPC SAMUELE SANGIORGIO, Lawrence Livermore Natl Lab, NIFFTE COLLABORATION — Nuclear data such as neutron-induced fission cross sections play a fundamental role in nuclear energy and defense applications. In recent years, understanding of these systems has become increasingly dependent upon advanced simulation and modeling, where uncertainties in nuclear data propagate in the expected performances of existing and future systems. It is important therefore that uncertainties in nuclear data are minimized and fully understood. For this reason, the Neutron Induced Fission Fragment Tracking Experiment (NIFFTE) uses a Time Projection Chamber (TPC) to measure energy-differential (n,f) cross sections with unprecedented precision. The presentation will discuss how the capabilities of the NIFFTE TPC allow to directly measures systematic uncertainties in fission cross sections, in particular for what concerns fission-fragment identification, and target and beam uniformity. Preliminary results from recent analysis of 238U/235U and 239Pu/235U data collected with the TPC will be presented. This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

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