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Measuring the $^{235}\text{U}(\text{n},\text{f})/{}^6\text{Li}(\text{n},\text{t})$ cross section ratio in the NIFFTE fissionTPC¹ MARIA ANASTASIOU, Lawrence Livermore Natl Lab, NIFFTE COLLABORATION — While nuclear data play an important role in nuclear physics applications, it has become important to have a better understanding and try to minimize their uncertainties. In particular, there is a need for precision neutron-induced fission cross section measurements on fissile nuclei. Neutron-induced fission cross sections are typically measured as ratios, with a well-known standard in the denominator. While the $^{235}\text{U}(\text{n},\text{f})$ standard is well measured, some light particle reactions are also well-known and their use as reference can provide information to remove shared systematic uncertainties that are present in an actinide-only ratio. The NIFFTE collaboration's fission time projection chamber (fissionTPC) is a $2\times 2\pi$ charged particle tracker designed for measuring neutron-induced fission. Detailed 3D track reconstruction of the reaction products enables evaluation of systematic effects and corresponding uncertainties which are less directly accessible by other measurement techniques. This work focuses on the recent measurement of the $^{235}\text{U}(\text{n},\text{f})$ using as a reference the standard ${}^6\text{Li}(\text{n},\text{t})$ reaction. Preliminary data of the $^{235}\text{U}(\text{n},\text{f})/{}^6\text{Li}(\text{n},\text{t})$ measurement deployed at the Los Alamos Neutron Science Center will be presented.

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Maria Anastasiou
Lawrence Livermore Natl Lab

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