

Abstract Submitted  
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**Measuring the  $^{239}\text{U}(\text{n},\text{f})$  cross section using a two neutron transfer surrogate reaction** JASON BURKE, LLNL, STARS/LIBERACE COLLABORATION — Measuring fission cross sections of unstable short lived actinides has been a difficult challenge to experimental physicists for decades. Cross sections for neutron induced reactions are essential for basic and applied science fields of study such as nuclear astrophysics and nuclear reactor design. Surrogate reactions offer an alternative approach to direct measurements. I will present our work on the surrogate two neutron transfer reaction  $^{238}\text{U}(^{18}\text{O},^{16}\text{O})^{240}\text{U}$  used to obtain the fission cross section of  $^{239}\text{U}(\text{n},\text{f})$  by comparing it to the known  $^{235}\text{U}(\text{n},\text{f})$  cross section obtained via the  $^{234}\text{U}(^{18}\text{O},^{16}\text{O})^{236}\text{U}$  reaction. This work was performed under the auspices of the U.S. Department of Energy under contract numbers DE-AC52-07NA27344 (LLNL), DE-AC02-05CH11231 (LBNL) and DE-FG52-06NA26206 (UR).

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