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First fission mass yield measurements using SPIDER at LANSCE KRISTA MEIERBACHTOL, FREDRIK TOVESSON, CHARLES ARNOLD, MATT DEVLIN, TODD BREDEWEG, MARIAN JANDEL, JUSTIN JORGENSON, RON NELSON, MORGAN WHITE, Los Alamos National Laboratory, DAN SHIELDS, Los Alamos National Laboratory, Colorado School of Mines, RICK BLAKELEY, ADAM HECHT, University of New Mexico — Robust measurements of fission product properties, including mass yields, are important for advancing our understanding of the complex fission process and as improved inputs to calculation and simulation efforts in nuclear applications. The SPIDER detector, located at the Los Alamos Neutron Science Center (LANSCE), is a recently developed mass spectrometer aimed at measuring fission product mass yields with high resolution as a function of incident neutron energy and product mass, charge, and kinetic energy. The prototype SPIDER detector has been assembled, tested, installed at the Lujan Center at LANSCE, and taken initial thermal neutron induced measurements. The first results of mass yields for spontaneous fission of ^{252}Cf and thermal neutron-induced fission of ^{235}U measured with SPIDER will be presented. Ongoing upgrades and future plans for SPIDER will also be discussed. This work is in part supported by LANL Laboratory Directed Research and Development Projects 20110037DR and 20120077DR. LA-UR-14-24830.

Krista Meierbachtol
Los Alamos National Laboratory

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