

Abstract Submitted
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Progress in the Development of a Lead Slowing-Down Spectrometer at LANSCE R.C. HAIGHT, S.A. WENDER, J.M. O'DONNELL, A. MICHAUDON, D.J. VIEIRA, J.M. SCHWANTES, T.A. BREDEWEG, E.M. BOND, J.B. WILHELMY, Los Alamos National Laboratory, D. ROCHMAN, Brookhaven National Laboratory, T. ETHVIGNOT, T. GRANIER, CEA-Bruyeres-le-Chatel, Y. DANON, C. ROMANO, Rensselaer Polytechnic Institute — Lead Slowing-Down Spectrometers (LSDS) have been used for many years to measure neutron-induced fission cross sections of very small samples of actinides. We are extending the range to ultra-small samples by driving a 20-ton LSDS with short, intense pulses of 800-MeV protons from the Proton Storage Ring at the Los Alamos Neutron Science Center. Neutrons are produced by the pulsed proton beam from the LANSCE Proton Storage Ring striking a tungsten target in the center of the lead. Fission reactions are detected as a function of time, and therefore neutron energy, after the beam pulse. Initial experiments have confirmed the calculated performance of the LSDS and have demonstrated the capability of measuring the neutron-induced fission cross section of Pu-239 with a sample mass of less than 10 nanograms. Progress in the development of this new capability and plans for a program of measurements will be described.

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