Abstract Submitted
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The LANL/LLNL Program to Measure Prompt Fission Neutron Spectra at LANSCE[1] ROBERT HAIGHT, Los Alamos National Laboratory, CHING YEN WU, Lawrence Livermore National Laboratory, HYE YOUNG LEE, TERRY TADDEUCCI, SHEA MOSBY, JOHN O'DONNELL, NIKOLAOS FOTIADES, MATTEW DEVLIN, JOHN ULLMANN, RONALD NELSON, STEPHEN WENDER, MORGAN WHITE, CLELL SOLOMON, DENISE NEUDECKER, PATRICK TALOU, MICHAEL RISING, Los Alamos National Laboratory, BRIAN BUCHER, MATTHEW BUCKNER, ROGER HENDERSON, Lawrence Livermore National Laboratory — Accurate data on the spectrum of neutrons emitted in neutron-induced fission are needed for applications and for a better understanding of the fission process. At LANSCE we have made important progress in understanding systematic uncertainties and in obtaining data for ^{235}U on the low-energy part of the prompt fission neutron spectra (PFNS), a particularly difficult region because down-scattered neutrons go in this direction. We use a double time-of-flight technique to determine energies of incoming and outgoing neutrons. With data acquisition via waveform digitizers, accidental coincidences between fission chamber and neutron detector are measured to high statistical accuracy and then subtracted from measured events. Monte Carlo simulations with high performance computers have proven to be essential in the design to minimize neutron scattering and in calculating detector response. Results from one of three approaches to analyzing the data will be presented.

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