

Abstract Submitted
for the DNP20 Meeting of
The American Physical Society

Prompt Neutron Spectra from Tagged Photofission of ^{235}U , ^{238}U , and ^{239}Pu with a Linearly Polarized 13.5 MeV Photon Beam¹ F.Q.L. FRIESEN, S.W. FINCH, C.R. HOWELL, C.R. MALONE, R.C. MALONE, W. TORNOW, TUNL, Duke University — The first angular differential data for prompt neutrons from photofission with a linearly polarized beam have been measured near the peak of the fission cross section for ^{235}U , ^{238}U and ^{239}Pu . A set of active fission ionization chambers were used to tag fission events and isolate the prompt neutrons associated with fission by forming timing coincidences between the ionization chambers and neutron detectors. The energies of the detected neutrons were determined using time-of-flight measurements. Results are presented in units of differential neutron multiplicity as a function of angle, as well as total multiplicity. No azimuthal polarization asymmetries were observed.

¹This work is supported under Department of Energy grant numbers DE-NA0003887 and DE-FG02-97ER41033

Forrest Friesen
TUNL, Duke University

Date submitted: 25 Jun 2020

Electronic form version 1.4