Abstract Submitted
for the DNP19 Meeting of
The American Physical Society

Neutron Interactions in GRETINA C. HULTQUIST, D. WEISSHAAR, J. BELARGE, E. KWAN, T. MIJATOVIC, National Superconducting Cyclotron Laboratory (NSCL), R. TITUS, R.G.T ZEGERS, B.A. BROWN, A. GADE, S. LIPSCHUTZ, J. SCHMITT, C. SULLIVAN, NSCL, Joint Institute for Nuclear Astrophysics (JINA), Department of Physics and Astronomy, Michigan State Univ, E.M. NEY, J. ENGEL, Department of Physics and Astronomy, The University of North Carolina at Chapel Hill, D. BAZIN, B. ELMAN, B. LONGFELLOW, E. LUNDERBERG, NSCL, Department of Physics and Astronomy, Michigan State University, P.C. BENDER, Department of Physics, University of Massachusetss Lowell, C.M. CAMPBELL, Lawrence Berkeley National Laboratory, B. GAO, Institute of Modern Physics, Chinese Academy of Sciences, S. NOJI, J. PEREIRA, NSCL, JINA, J.C. ZAMORA, Instituto de Fisica, Universidade de Sao Paulo — GRETINA is a high-resolution γ-ray spectrometer consisting of segmented germanium crystal detectors that are subject to high-energy neutron damage via the destruction of the crystal lattice structure. Recently, GRETINA was used in a (t, ^{3}He+γ) probe of the 86Kr nucleus, where a triton beam was accelerated towards Krypton gas cell, contained within two Kapton foils ($C_{22}H_{10}N_2O_5$). t(p,n)^{3}He events from interactions with Hydrogen in the Kapton foil were isolated to study the interactions of neutrons in GRETINA. Neutron-induced peaks and other phenomena were identified in the measured spectra from neutron events in the Germanium crystals. These experimental results will be compared to Geant4 simulations to study the efficacy of simulations to replicate neutron interactions in GRETINA.

Charles Hultquist
Michigan State Univ

Date submitted: 07 Jul 2019 Electronic form version 1.4