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Neutron Photoproduction from ^{139}La Using 12-15 MeV Linearly Polarized γ-Rays[1] R.K. THRASHER, J. HAUVER, W.R. HENDERSON, C.S. WHISNANT, James Madison University, M.W. AHMED, H.J. KARWOWSKI, J.M. MUELLER, L.S. MYERS, J. SILANO, J.R. TOMPKINS, H.R. WELLER, W.R. ZIMMERMAN, TUNL, B.J. DAVIS, D.M. MARKOFF, North Carolina Central University, M. SPRAKER, R.M. PRIOR, North Georgia College & State Univ., R.H. FRANCE, Georgia College — Data have been collected at the High Intensity γ-ray Source (HIγS) to investigate neutron emission from a ^{139}La target with linearly polarized gamma rays at E_γ= 12, 13, 14, and 15 MeV. Liquid scintillator detectors were placed at scattering angles of 55°, 90° and 125° above, below and to the left and right of the target. Six additional detectors were placed at angles of 72°, 107°, and 142° above and to the right of the target. The ratio of neutron yields parallel to neutron yields perpendicular to the plane of polarization observed as a function of E_n, E_γ, and θ characterizes the response of the nucleus and may prove to be a useful observable in nuclear forensics. The results of the experiment will be discussed.

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Steve Whisnant
James Madison University

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