

Abstract Submitted  
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**A study of the ( $\vec{\gamma},n$ ) reaction on  $^{235}\text{U}$ ,  $^{238}\text{U}$ , and  $^{nat}\text{Pb}$  between 11 and 15.5 MeV<sup>1</sup>** J.R. TOMPKINS, H.J. KARWOWSKI, UNC-Chapel Hill and TUNL, M.W. AHMED, N. BROWN, S.S. HENSHAW, J.M. MUELLER, B.A. PERDUE, S. STAVE, H.R. WELLER, Duke U. and TUNL, B. DAVIS, D.M. MARKOFF, NCCU and TUNL, G. FELDMAN, GWU, L. MYERS, UIUC — Polarized asymmetries of neutrons produced by linearly polarized  $\gamma$ -ray beams have been investigated for  $^{235}\text{U}$ ,  $^{238}\text{U}$ , and  $^{nat}\text{Pb}$ . These studies were carried out at the High Intensity  $\gamma$ -ray Source at TUNL at 6  $\gamma$ -ray energies,  $E_\gamma$ , between 11.0 and 15.5 MeV. The ratio formed between neutrons emitted parallel to the plane of polarization to those emitted perpendicular was measured at  $\theta = 54, 90, \text{ and } 126^\circ$ . At  $E_\gamma = 15.5$  MeV and  $\theta = 90^\circ$ , the ratio is as large as 2.5, 2.9, and 8.0 for  $^{235}\text{U}$ ,  $^{238}\text{U}$ , and  $^{nat}\text{Pb}$ , respectively. Basic angular momentum formalism and the assumption of dominant E1 absorption in the GDR region are being used along with the level schemes of the residual nuclei in an attempt to understand the energy dependence of the measured ratios. The experimental technique and preliminary results will be presented.

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