Neutron Photoproduction from Sn with Linearly Polarized $\gamma$-rays between 13 and 15 MeV\(^1\) J. HAUVER, W. HENDERSON, C.S. WHISNANT, James Madison University, M. AHMED, J. MUELLER, L. MYERS, S. STAVE, H.R. WELLER, TUNL, Duke University — Data have been collected at the High Intensity $\gamma$-ray Source (HI$\gamma$S) to investigate neutron emission from a natural Sn target with linearly polarized gamma rays at $E_\gamma = 13, 15, \text{and } 15.5 \text{ MeV}$. Liquid scintillator detectors were placed at scattering angles of 55°, 90° and 125° above, below and to the left and right of the target. Four additional detectors were placed at angles of 72° and 107° along the top and right. The $E_\gamma$ dependence of the ratios of neutron yields, $I_{\text{para}}/I_{\text{perp}}$, are examined. The ratio at 90° should depend only on the $P_2(\cos(\theta))$ coefficient in the angular distribution. A comparison of these results will be discussed.

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