Abstract Submitted for the HAW09 Meeting of The American Physical Society

Compton Scattering on ^{209}Bi at $HI\gamma S$ From $E_{\gamma} = 11 - 30$ MeV¹ S.S. HENSHAW, M.W. AHMED, N. BROWN, B.A. PERDUE, S. STAVE, H.R. WELLER, Duke U/TUNL, P.P. MARTEL, A. TEYMURAZYAN, R. MISKIMEN, UMass, R.M. PRIOR, M.C. SPRAKER, NGCSU, R. PYWELL, USask, G. FELD-MAN, GWU, A.M. NATHAN, UIUC, S. WHISNANT, JMU — New data collected at the High Intensity γ -ray Source (HI γ S) were taken to investigate the Iso-Vector Giant Dipole (IVGDR) and Giant Quadrupole (IVGQR) Resonance Regions in ²⁰⁹Bi, $E_{\gamma} = 11 - 30$ MeV. Linearly polarized $\vec{\gamma}$ -rays were incident upon an isotopically pure (>99.9%) ²⁰⁹Bi target and the scattered γ -rays were detected using the HI γ S NaI Detector Array (HINDA). HINDA is an array of large (10"x10") core detectors surrounded by 3" thick NaI shields that are segmented optically into 8 individual segments. This assembly was run in an anti-coincidence mode to reduce background and improve the resolution as well as a coincidence mode to isolate the first escape peak. During the 150 hour run, the nearly mono-energetic $\vec{\gamma}$ -ray intensities were $1 \times 10^5 - 1 \times 10^7 \gamma$'s/sec on target and statistical accuracies of 1-3% were achieved. Preliminary analysis of angular distributions of cross sections and analyzing powers as well as absolute cross sections will be reported.

¹Supported by US DOE Grant Nos. DE-FG02-97ER41033, DE-FG02-03ER41231 and NSF Grant No. PHY-0619183.

S.S. Henshaw Duke University and TUNL

Date submitted: 29 Jun 2009 Electronic form version 1.4