

Beam and Beam-Target Asymmetry for $\gamma n(p) \rightarrow \pi^- p(p)$ in N^* Resonance Region

H. Lu¹

¹University of Iowa

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Abstract

Single and double asymmetries play key roles of understanding the single meson photoproduction. Recently, a paper reported the first beam-target double-polarization asymmetries with circular beam in the $\gamma n(p) \rightarrow \pi^- p(p)$ reaction in the nucleon resonance region. This talk presents the first beam-target double-polarization asymmetries with linear beam in the same reaction and the same energy region by the same group. Linearly polarized photons and longitudinally polarized deuterons in solid hydrogen deuteride (HD) have been used with the CEBAF Large Acceptance Spectrometer (CLAS) at Jefferson lab. Different beam and target polarization runs are combined to extract beam (Σ) and beam-target (G) asymmetries. The Σ observables are consistent with published results. The results of G and its comparison with model prediction is reported.