Beam Asymmetry t-dependence for photoproduced Eta' at GlueX

Churamani Paudel[1] Joerg Reinhold[1]
[1]Florida International University
(For GlueX Collaboration)

Abstract

The GlueX experiment is a photoproduction experiment which is based at Thomas Jefferson National Lab in Newport News, Virginia. We report on measurements of the beam asymmetry(Σ) in the reaction $\gamma p \to \eta\prime p$, using a tagged, linearly polarized 9 GeV photon beam incident on a liquid hydrogen target. A previous measurement, which was limited to momentum transfer up to $-t = 0.9$ (GeV/c)^2, indicated that the reaction mechanism is dominated by ρ and ω meson exchanges [1]. Newly collected data with 3-4 times larger statistics will allow us to study whether this holds true at larger momentum transfer. We will present the preliminary results of azimuthal angular distributions and extracted beam asymmetries as a function of -t for different $\eta\prime$ decay modes.

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