

Abstract Submitted
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Measurement of the t -dependence for the Beam Asymmetry of Photoproduced η Mesons at GlueX¹ TOLGA ERBORA, JOERG REINHOLD, Florida International University, GLUEX COLLABORATION — We report on the photoproduction of η mesons studied at the GlueX experiment at Thomas Jefferson National Laboratory in Newport News, VA. These particles are produced by a linearly polarized photon beam at energies between 8.2 and 8.8 GeV incident on protons in a liquid hydrogen target. Azimuthal angular distributions of the η produced in the lab frame, with respect to the direction of the polarized photon facilitate the extraction of the beam asymmetry Σ for the reaction $\vec{\gamma}p \rightarrow \eta p$. Σ is measured as a function of four-momentum transfer $-t$. The data currently being analyzed is 3-4 times larger compared to previous GlueX results [1,2], thereby allowing us to extend these measurements to values beyond the previous limitation of $-t \leq 1.1$ (GeV/c)². Preliminary results will be shown for events reconstructed from the decays of $\eta \rightarrow \pi^+\pi^-\pi^0$ and $\eta \rightarrow \gamma\gamma$. [1] S. Adhikari *et al.* [GlueX Collaboration], Phys. Rev. C **100**, no. 5, 052201 (2019) [2] H. Al Ghouli *et al.* [GlueX], Phys. Rev. C **95**, no.4, 042201 (2017)

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