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Beam Asymmetry in γp $\rightarrow \eta\ \Delta^+$ at GlueX

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The photo-production mechanism used in the GlueX experiment by impinging an 8.2-8.8 GeV linearly polarized photon beam on a liquid hydrogen target allows the mapping of light mesons in unprecedented detail with particular interest in exotic meson candidates. Polarization observables such as beam asymmetry Σ, extracted from azimuthal (ϕ) angular distributions between the meson production plane and the polarized photon beam, help in understanding production mechanisms via t-channel quasi-particle exchange processes using Regge theory. We report preliminary results on the beam asymmetry measurements for η in γp $\rightarrow \eta\ \Delta^+$. The reaction γp $\rightarrow \eta\ \Delta^+$ provides an opportunity for validation of previous η asymmetry measurements and theoretical calculations. Ensuring that exchange mechanisms are understood is a crucial ingredient to the establishing of new photoproduced light meson states.

email address

vnv724@uregina.ca

Please select: Experiment or Theory

Experiment

Primary author(s) : NEELAMANA, Varun (University of Regina); Mr ZARLING, Jonathan (University of Regina); PAPANDREOU, Zisis (University of Regina)

Presenter(s) : NEELAMANA, Varun (University of Regina)