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Charged Pion Photoproduction Beam Asymmetries at GlueX JONATHAN ZARLING, Indiana Univ - Bloomington, GLUEX COLLABORATION — The production of single pseudoscalar mesons with a 9 GeV linearly polarized beam provides insight into the production mechanisms for exotic hybrids mesons, a key goal of the GlueX experiment. Single pseudoscalar production also provides a simple system in which comparisons between theory and experiment can be made as GlueX begins to explore this energy regime with unprecedented statistics. Asymmetry measurements have a history dating to bubble chamber-era experiments such as those at SLAC and DESY and can be modeled by quasiparticle t-channel exchange using Regge theory. In this talk, the Σ asymmetries with charged pions will be considered in the reactions $\gamma p \to \pi^+ n$, $\gamma p \to \pi^+ \Delta^0$, and $\gamma p \to \pi^- \Delta^{++}$.

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