

Abstract Submitted  
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**$\Xi^-$  Polarization in Photoproduction with CLAS** JASON BONO, LEI GUO, Florida International University, CLAS TEAM — The weak decay of hyperons offers a valuable means of measuring their polarization, providing insight into their production mechanisms. Jefferson Lab’s CLAS collaboration has utilized this property of weak decays and has published the most precise polarization measurements of  $\Lambda$  to date in both photo and electroproduction. No such study however has been published for the  $\Xi$  baryon in either photo or electroproduction. High statistics CLAS data was collected in 2008 with a luminosity  $68pb^{-1}$  using a circularly polarized photon beam with energies up to 5.45 GeV and a liquid hydrogen target. This dataset known as “g12” is the world’s largest for meson photoproduction and provides a first time opportunity to study various aspects of the  $\Xi$  baryon in photoproduction. By analyzing the angular distribution of the  $\Xi^- \rightarrow \pi^-(\Lambda^0)$  decay in the  $\gamma p \rightarrow K^+K^+\Xi^- \rightarrow K^+K^+\pi^-(\Lambda^0)$  reaction, the induced and transferred polarization of the  $\Xi^-$  can be measured. The data has a nearly background free signal with approximately 4500 events, a globally unprecedented yield for detecting  $\Xi^- \rightarrow \pi^-(\Lambda^0)$  in photoproduction. Preliminary results displaying polarization as a function of beam energy and center of mass  $\Xi^-$  angle will be presented. Additionally basic features of the data and simulation will be shown including mass spectra and important aspects of the phase space.

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