Contribution ID: **179** Type: **Parallel**

Measurement of Polarization Observables in the Reaction $\gamma p \to K^+\Lambda$

Tuesday, 29 May 2018 18:10 (20 minutes)

Spin observables are important to understand the production mechanisms of hyperons, as well as the contribution of intermediate baryon resonances. Λ polarization observables have been studied extensively in the recent decades using the reaction $\gamma + p \to K^+ + \Lambda$. This talk presents the measurement of transferred polarization coefficients C_x and C_z, and the induced polarization P, using a new set of high statistics data, obtained using the CEBAF Large Acceptance Spectrometer (CLAS) detector at Jefferson Lab. The photon beam energy range is 1.117 to 5.45 GeV. These results (C_x, C_z and P) are extracted simultaneously using the Maximum Likelihood Method. The measurements for C_x and C_z have nearly an order of magnitude increase in events compared to previously published results and also extend the kinematic range for $W > 2.54$ GeV, important for both the search for high-mass nucleon states as well as to provide information about non-resonant contributions.

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Session Classification: QCD, Hadron Spectroscopy, and Exotics

Track Classification: QCDHS