Preliminary Results on Polarization Observables for Double-Pion Photoproduction from FROST

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Hadron spectroscopy is essential to understand nucleon structure in the low energy regime. Many low mass resonances have been observed via πN scattering but only a few resonances above 1.7 GeV have been seen so far. It is speculated that photoproduction could be the key to detect the *missing* resonances, many of which probably decay into multi-particle final states. Double-pion photoproduction with $p\pi^+\pi^-$ final state dominates the total cross section for center-of-mass energies above 1.7 GeV, making it an indispensable channel to explore. To extract the resonances that contribute to this reaction it is imperative to measure polarization observables which assist in isolating the broad and overlapping resonances. Here we report on the preliminary results obtained for polarization observables $I^{\odot}$, P_z, $P_z^{\odot}$ from the study of $\pi^+\pi^-$ photoproduction using circularly polarized photons (E_γ up to 2.3 GeV) incident on a longitudinally polarized butanol target and discuss the ongoing analysis to extract $P_x^{s,c}$, $P_y^{s,c}$ using linearly polarized photons (coherent edge up to 2.1 GeV) and a transversely polarized target. The experiments were conducted at Jefferson Lab using the CLAS spectrometer.