

# Measurement of Beam Asymmetry, $I^\odot$ in $\vec{\gamma}p \rightarrow p\pi^+\pi^-$ with CLAS spectrometer at Jefferson Laboratory

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The study of baryon resonances provides a deeper understanding of the strong interaction because the dynamics and relevant effective degrees of freedom hidden within them are reflected by the properties of the excited states of baryons. Higher-lying excited states at and above 1.9 GeV/ $c^2$  are generally predicted to have strong couplings to the  $\pi\pi N$  final states via  $\pi\Delta$  or  $\rho N$  intermediate states. Double-pion photoproduction is therefore important to investigate properties of higher-mass resonances. The CLAS g9a (FroST) experiment, as part of the  $N^*$  program at Jefferson Laboratory, has accumulated photoproduction data using linearly- and circularly-polarized photons incident on a longitudinally-polarized butanol target in the photon energy range 0.3 to 2.4 GeV. In this contribution, the extraction of the beam asymmetry using circularly polarized photons for the reaction  $\vec{\gamma}p \rightarrow p\pi^+\pi^-$  will be described. Our preliminary results are in overall good agreement with previous CLAS data.

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