Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

Polarization Observables in the $\vec{p}\vec{\gamma} \rightarrow \pi^+\pi^- p$ Reaction from FROST[1] STEFFEN STRAUCH, HAO JIANG, YUQING MAO, ANETA NET, University of South Carolina, CLAS COLLABORATION — Double-pion photoproduction is an important tool in the study of baryon resonances. It dominates the total photoabsorption cross section above the second resonance region and allows the study of resonance decay properties. The $\vec{p}\vec{\gamma} \rightarrow \pi^+\pi^- p$ reaction has been measured in Hall B at Jefferson Lab with linearly and circularly polarized tagged photon beams incident on longitudinally and transversely polarized protons. The experiment covered center-of-mass energies between 1.4 GeV and 2.3 GeV. The target was a FROzen Spin Target (FROST) and the final-state particles were detected by the CEBAF Large Acceptance Spectrometer (CLAS). Linear combinations of polarized yields have been used for the extraction of the single-, P_z, $I^{\odot}$, and double- polarization observables, $P_{x,y}^{\odot}$, $P_z^{c,s}$. Most of these observables were extracted for the first time. Calculations of an effective Lagrangian model have been compared with the preliminary results and resemble some features of the data. The data will constrain model calculations and test our understanding of nucleon structure by establishing reaction amplitudes. The data will thus improve our knowledge of photocouplings, hadronic resonance decays, and possibly help to identify new baryon resonances.

[1]Supported in parts by the U.S. National Science Foundation: NSF PHY-1205782

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Date submitted: 25 Jun 2013 Electronic form version 1.4