

Abstract Submitted  
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**Photoproduction of  $K^0\Sigma^+$  at CLAS<sup>1</sup>** KYLE ROMINES, ZULKALIDA AKBAR, VOLKER CREDE, Florida State Univ, CLAS COLLABORATION — Hadron spectroscopy is used to acquire more information on the quark-gluon interactions and existence of excited hadrons. The photoproduction reaction  $\gamma p \rightarrow K_S^0\Sigma^+$  using data from two different experiments of CLAS at Jefferson Lab has been analyzed. This reaction is underexplored among the isospin-related  $K\Sigma$  channels. In the g12 experiment, photons ranging in energy from 1.1 to 5.4 GeV were incident on a liquid hydrogen target and the differential cross section was extracted. From the g9a experiment, where circularly-polarized photons were incident on a longitudinally-polarized butanol target, the helicity asymmetry E has been determined. In both experiments, events which contained the proton and three-pion final state  $\pi^+\pi^-\pi^0$  were selected and an event-based quality factor determination was used for background subtraction. Monte Carlo simulations were then performed to determine acceptance corrections for the cross section. These observables will have a significant impact on partial wave analysis that aims on extracting nucleon resonances from photoproduction data.

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