

Abstract Submitted
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Exclusive ω^0 Electroproduction off the Proton as a Probe of High-Lying N^* States¹ EVAN PHELPS, RALF GOTHE, GLEB FEDOTOV, YE TIAN, ARJUN TRIVEDI, University of South Carolina, CLAS COLLABORATION TEAM — Differential cross-sections of $\omega^0(783)$ electroproduction in the exclusive 3π reaction channel off the proton will be reported over a kinematic range from the production threshold to $W = 3.0 \text{ GeV}$ and from $Q^2 = 1.0 \text{ GeV}^2$ to 5.5 GeV^2 . This kinematic region is composed of many overlapping N^* states and is strongly affected by the final state interaction between many open exclusive channels, so the information from different exclusive channels is of particular importance for reliable extraction of resonance parameters. Exclusive ω^0 electroproduction provides an excellent probe of potential high-lying resonances due to the narrow 9-MeV ω^0 decay width and its isoscalar nature that restricts it to isospin-1/2 resonance couplings. Extending our view of the ω^0 channel into the virtual photon domain, via exclusive electroproduction measurements, provides an opportunity to further explore potential resonance contributions and offers the natural next step toward extracting $\gamma_v NN^*$ transition form factors at different photon virtualities. In this work, preliminary differential cross-sections were obtained from data taken with the CLAS detector at Jefferson Lab during run periods E1F and E1-6.

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