

Abstract Submitted
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The Beam-Helicity Asymmetry in ω Photoproduction¹ SHELBY ARRIGO, Florida State University, VOLKER CREDE, Florida State University, CLAS Collaboration, CLAS COLLABORATION — The spin-1 nature of the ω meson gives rise to additional spin observables, not accessible in spinless mesons. Data from the CLAS-g12 experiment at Jefferson Lab has been used involving a circularly polarized tagged photon beam and an (un)polarized proton target to extract the beam helicity asymmetry. This observable is an important component in the global effort of mapping the excited nucleon spectrum since the asymmetry allows one to learn about the intermediate states of the reaction where an ω meson can form in the decay of an excited nucleon state. The observable will help shed light on the spin orientation of the produced ω meson in the final state, which will provide insight into the inner workings of the nucleon resonances in the intermediate state. The helicity frame has been used, where the z axis is defined by the momentum axis of the ω meson in the overall center-of-mass frame. The first step in this analysis is to look at the asymmetry between different beam helicity states, and an extension of this data analysis will be to measure the asymmetry between orthogonal initial-proton polarization states (using longitudinally polarized protons) in an effort to extract the target asymmetry in this reaction.

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