

Abstract Submitted
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First Measurements of the ρ^1 , ρ^2 , and ρ^3 Spin Density Matrix Elements in $\gamma p \rightarrow p\omega$ using CLAS at JLab BRIAN VERNARSKY, Carnegie Mellon University — In an effort towards a “complete” experiment for the ω meson, we present studies from two experiments with unpolarized targets, one using a circularly polarized photon beam (g1c) and one using a linearly polarized photon beam (g8b), both carried out using the CEBAF Large Acceptance Spectrometer (CLAS) at Jefferson Lab. The experiments were analyzed using an extended maximum likelihood fit to the cross section with partial wave amplitudes. New likelihood functions were calculated to account for the polarization of the photon beams. The results of these fits are then used to project out the spin density matrix for the ω . First measurements of the ρ^1 , ρ^2 , and ρ^3 spin density matrix elements will be presented using this method. As a check, we compare to another method, Schilling’s method, which fits the decay angular distribution with a function that uses the spin density matrix elements as parameters.

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