

Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

Polarization observables from the photoproduction of ω -mesons using Linearly Polarized Photons DANNY MARTINEZ, PHILIP L. COLE, Idaho State University — We report on the Spin Density Matrix Elements (SDMEs), for the ω meson using a beam of linearly polarized photons in the photon energy region of $E_\gamma = 1.3$ to 1.9 GeV. The angular distributions of the daughter pions from ω decay give critical information on the mechanisms for the photoproduction of ω meson. Other observables are easily obtained using the SDMEs, such as the photon beam asymmetry Σ or the parity asymmetry Σ_P , which calculated as function of the Mandelstam variables s and t ($\Sigma = \Sigma(s, t)$), constraints on the partial wave analyses used to extract the nucleon excitation spectrum from the available data and help distinguishing between pion exchange and pomeron exchange (VDM model). The SDMEs, $\rho_{MM'}^0$ that parametrize the ω meson decay angular distribution, provide an understanding in determining the spin and parity of the exchanged particle in the t -channel production process and deviations from the Vector Dominance Model (VDM). Since the ω is an isoscalar, it couples only to N^* states, i.e. $I = \frac{1}{2}$. This eliminates Δ resonance production. These preliminary results are from the g8b dataset collected in 2005 with CLAS detector at Jefferson Lab.

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Date submitted: 30 Jun 2013

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