

Abstract Submitted  
for the APR18 Meeting of  
The American Physical Society

**Differential Cross Section for  $\gamma d \rightarrow \omega d$  using CLAS at Jefferson Lab** TAYA CHETRY, Ohio Univ, KENNETH HICKS, Ohio University, CLAS Collaboration, CLAS COLLABORATION — Coherent  $\omega$ -meson photoproduction from the deuteron has been studied using CLAS at Jefferson Lab, Virginia, as a function of the photon energy and the 4-momentum transfer. Tagged photons with beam energies between 0.8 and 3.6 GeV were produced using the bremsstrahlung process incident on a deuterium target. The final state particles detected are an energetic deuteron and a pair of charged pions. A three-pion decay mode for the vector meson  $\omega$  is used to measure differential cross section for  $\gamma d \rightarrow \omega d$ . The cross sections are measured in the energy range  $1.4 < E_\gamma < 3.4$  GeV. A model based on rescattering is consistent with the data at intermediate and high momentum transfer,  $|t|$ . For  $2.8 < E_\gamma < 3.4$  GeV, the total cross-section of  $\omega - N$  scattering is 30-40 mb in the framework of Vector Meson Dominance. This data set dramatically improves the world data on the  $\gamma d \rightarrow \omega d$  reaction and opens up the possibility for further study of the  $\omega N$  interaction.

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Date submitted: 11 Jan 2018

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