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Differential Cross Section for $\gamma d \rightarrow \omega d$ using CLAS at Jefferson Lab TAYA CHETRY, KENNETH HICKS, Ohio University, CLAS COLLABORATION — Coherent ω -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 ω 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 ωN interaction.

☒ Prefer Oral Session
☐ Prefer Poster Session

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