

Abstract Submitted
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Exclusive π^- Electroproduction off the Neutron in Deuterium in the Resonance Region YE TIAN, University of South Carolina, RALF W. GOTHE COLLABORATION, GLEB V. FEDOTOV COLLABORATION, EVAN PHELPS COLLABORATION, ARJUN TRIVEDI COLLABORATION — The goal of our research is to extract the exclusive $\gamma^*(n) \rightarrow p^+\pi^-$ reaction cross section from the deuterium data and to determine the final-state-interaction (FSI) correction factor (R). The “e1e” CLAS data taken in Hall B at Thomas Jefferson National Accelerator Laboratory, that we analyze, includes both a hydrogen and deuterium target run period, which allows a combined analysis of pion electroproduction off the free proton, the bound proton, and the bound neutron. Hence it will provide the experimentally best possible information about the off-shell and final state interaction effects in deuterium, which must be considered in order to extract the neutron cross section. The good agreement of the inclusive cross section off deuterium with the world data not only verified that the electron identification and fiducial cuts are proper, but also confirms that the normalization used in the exclusive channel is right. In this talk, I will present the current data analysis status, the FSI correction factor calculation, and potentially preliminary cross-section results.

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