ρ^0 photoproduction off of protons in CLAS

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Abstract

Photoproduction of vector mesons plays an important role in elucidating various phenomena in nuclear physics. The lightest vector meson, ρ^0, remains difficult to study due to its broad width of nearly 150 MeV and its vicinity in Mandelstem s to the production of Δ baryons, especially $\Delta(1232)$. Thus, cross section data for ρ^0 production are sparse. In this talk, I give a brief description of my ongoing Ph. D. analysis in which I extract the differential cross section for ρ^0 photoproduction off of protons for a wider range in Mandelstam s and -t than previous measurements with higher statistics. Data were accumulated at Jefferson Lab as part of the CLAS experiment in 2008. The experiment used a circularly polarized photon beam with energies between 1.15 and 5.45 GeV incident on an LH_2 target.