

Abstract Submitted
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Meson Production off the Deuteron¹ IGOR STRAKOVSKY, WILLIAM BRISCOE, DIANE SCHOTT, RONALD WORKMAN, The George Washington University — An accurate evaluation of the electromagnetic couplings N^* (Δ^*) $\rightarrow \gamma N$ from meson photoproduction data remains a paramount task in hadron physics. Here we focus on the single-pion production data and note that a complete solution requires couplings from both charged and neutral resonances, the latter requiring π^-p and π^0n photoproduction off a neutron target (where the neutron is bound in the deuteron.) Experimental data for neutron-target photoreactions are much less abundant than those utilizing a proton target, constituting only about 15% of the present World database. As a result, our knowledge of the neutral resonance couplings is less precise as compared to the charged values. Extraction of the two-body ($\gamma n \rightarrow \pi^-p$ and $\gamma n \rightarrow \pi^0n$) cross sections requires the use of a model-dependent nuclear correction, which mainly comes from final-state interactions (FSI). We recently applied our FSI corrections to CLAS $\gamma d \rightarrow \pi^-pp$ data to get elementary cross sections for $\gamma n \rightarrow \pi^-p$ for a broad energy range, $E_\gamma > 1$ GeV. Then, we did the same for a MAMI-B GDH experiment to get $\gamma n \rightarrow \pi^-p$ about the Δ -isobar.

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