

Abstract Submitted
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Extracting the photoproduction cross section off the neutron $\gamma n \rightarrow \pi^- p$ from deuteron data with FSI effects¹ IGOR STRAKOVSKY, GWU, VLADIMIR E. TARASOV, ITEP, WILLIAM BRISCOE, GWU, HAIYAN GAO, Duke U., ALEXANDER E. KUDRYAVTSEV, ITEP — The incoherent pion photoproduction $\gamma d \rightarrow \pi^- pp$ is considered theoretically in a wide energy region below 2.7 GeV. The model applied contains the impulse approximation (IA) as well as the NN- and πN -FSI. The aim of the project is to study a reliable way for getting the information on elementary $\gamma n \rightarrow \pi^- p$ cross section beyond the IA for $\gamma d \rightarrow \pi^- pp$. For the elementary $\gamma N \rightarrow \pi N$, $NN \rightarrow NN$, and $\pi N \rightarrow \pi N$ amplitudes, the results of the GW DAC are used. There are no additional theoretical constraints. The calculated $d\sigma/d\Omega(\gamma d \rightarrow \pi^- pp)$ are compared with existing data. The procedure used to extract information on the $d\sigma/d\Omega(\gamma n \rightarrow \pi^- p)$ on the neutron from the deuteron data using the FSI correction factor R is discussed. The results show a sizeable FSI effect $R \neq 1$ from S-wave part of pp-FSI at small angles close to $\theta_1 \sim 0$: this region narrows as the photon energy increases. At larger angles, the effect is small ($|R-1| \ll 1$) and agrees with estimations of FSI in the Glauber approach.

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Igor Strakovsky
GWU

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