DIS 2015
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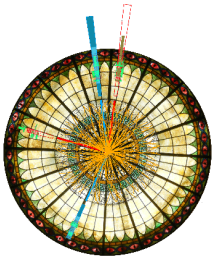

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First L/T separation of π^0 electroproduction from Jefferson Laboratory Hall A

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The deeply virtual π^0 production cross section can be decomposed according to the polarization of the virtual photon.
\begin{equation}
\frac{d\sigma}{dt}=\frac{d\sigma_T}{dt}+\epsilon \frac{d\sigma_L}{dt}+\sqrt{2\epsilon (\epsilon+1)}\frac{d\sigma_{TL}}{dt} \cos(\phi)+\epsilon \frac{d\sigma_{TT}}{dt} \cos(2\phi)
\end{equation}
where ϵ represents the degree of polarization of the virtual photon and ϕ the angle between the leptonic and the hadronic plane.

The unseparated π^0 electroproduction cross sections have been extracted in the Halls A and B of Jefferson Laboratory. Using the ϕ-dependence, both experiments measured a large $\sigma = \sigma_T + \epsilon\sigma_L$. However generalized parton distributions-based models predict a small contribution σ_L in a theoretical framework where factorization has only been proven for longitudinal polarized photons.

Assuming the validity of factorization for transverse photons, Kroll and Goloskokov developed a model where the transversity GPDs would couple to the twist-3 distribution amplitudes of the pion, amplifying the σ_T signal. In order to verify this prediction, the E07-007 experiment measured the π^0 electroproduction cross section on proton in the Hall A of Jefferson Laboratory. Using two beam energies to measure the cross section at same Q^2 and x_B, we change the ϵ value and are able to separate the transverse from the longitudinal contribution. For the first time, I will present the fully separated π^0 electroproduction cross section and compare it to the existing models.

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