

Hard Exclusive Electroproduction of 2 Pions off Proton and Deuteron at HERMES

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Exclusive electroproduction of unlike sign pion pairs off a hydrogen and off a deuterium target has been studied with the HERMES experiment. In particular, the $\langle \cos \theta \rangle$ angular distribution versus the invariant mass of the two- π pair for each of the target types. Furthermore, also the $\langle \cos \theta \rangle$ distribution versus x_{Bj} with hydrogen target was analyzed.

The analysis results on the exclusive $\pi^+ \pi^-$ electroproduction might be interpreted in the framework of the Generalized Parton Distributions GPD. Models show that certain components of the angular distribution of π^+ get contributions only from the interference between the isoscalar channel $I=0$ and the isovector channel $I=1$ of the pion pair $\pi^+ \pi^-$.

Results from the analysis of these angular distribution, in principle, will permit a better tuning both of the universal GPDs inside the proton and the distribution amplitude (DA) $2\pi DA$ that describes the fragmentation of partons into the 2π final state.