

Joint 20th International Workshop on Hadron Structure and Spectroscopy and 5th workshop on Correlations in Partonic and Hadronic Interactions



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Studies of Transversity GPDs in Exclusive Reactions

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A longstanding objective in nuclear and particle physics is to describe the three-dimensional structure of the nucleon in terms of quark and gluon fields. In this context, exclusive electron scattering experiments, where all final state particles are measured, play a significant role. Examples include electron elastic scattering, deeply virtual Compton scattering (DVCS), and deeply virtual meson electroproduction (DVMP). Exclusive electron scattering reactions at high momentum transfers are directly related to the Generalized Parton Distributions (GPDs) of quarks and gluons. Most reactions studied, such as DVCS and vector meson electroproduction, are primarily sensitive to chiral-even GPDs. However, pseudoscalar meson electroproduction, particularly the production of π^0 and η mesons, has been identified as especially sensitive to parton helicity-flip subprocesses. Dedicated experiments to study deeply virtual meson production have been conducted at Jefferson Lab. A comparison of these experimental results with theoretical models will be presented, along with a discussion on the extraction of transversity GPD parameters through a global fit of the available data.

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