XXI International Workshop on Deep-Inelastic Scattering and Related Subjects



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From Hard Exclusive Meson Electroproduction to Deeply Virtual Compton Scattering

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We systematically evaluate observables for hard exclusive electroproduction of real photons and compare them to experiment using a set of Generalized Parton Distributions (GPDs) whose parameters are constrained by Deeply Virtual Meson Production data, nucleon form factors and parton distributions. The Deeply Virtual Compton Scattering amplitudes are calculated to leading-twist accuracy and lead- ing order in QCD perturbation theory while the leptonic tensor is treated exactly, without any approximation. This study constitutes a check of the universality of the GPDs. We summarize all relevant details on the parametrizations of the GPDs and describe its use in the handbag approach of the aforementioned hard scatter- ing processes. We observe a good agreement between predictions and measurements of deeply virtual Compton scattering on a wide kinematic range, including most data from H1, ZEUS, HERMES, Hall A and CLAS collaborations for unpolarized and polarized targets when available. We also give predictions relevant for future experiments at COMPASS and JLab after the 12 GeV upgrade.

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