

Hard exclusive reactions beyond DVCS: Compton-like and vector meson production for GPD studies

The so-called GPDs (Generalized Parton Distributions), sensitive to the multi-dimensional “position” versus “momentum” of the nucleon’s partonic constituents have been studied for many years at various facilities, for various kinematics. Most of the published measurements and most constraints to GPD models come from the DVCS (Deeply Virtual Compton Scattering) process. There is a growing interest for exploring other reactions, thanks in particular to the perspective of new facilities and upgrades at existing facilities. In this talk, I will discuss the complementarity of Compton-like reactions, such as TCS and DDVCS, to DVCS measurements, in particular for GPD’s fitting and interpretations. I will also discuss what new can be brought with a coherent exclusive meson measurement program, in addition to Compton-like reactions, at the Jefferson Lab Hall C with the recently upgraded 11 GeV beam energy from CEBAF. I will show projections for various reactions, discuss the experimental requirements, what is new in terms of physics, and short term projects for Hall C, including the development of new detectors, and with a particular emphasis on “dilepton” channels and muons.

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Track Classification: Structure of hadrons