

Abstract Submitted
for the APR11 Meeting of
The American Physical Society

Kinematic Issue in DVCS and GPDs¹ CHUENG-RYONG JI, North Carolina State University, BERNARD BAKKER, Vrije Universiteit — Whether the kinematics includes the hard transverse photon momenta or not makes a dramatic difference in computing deeply virtual Compton scattering (DVCS) in terms of the widely used reduced operators that define generalized parton distributions (GPDs). We present a tree-level complete DVCS amplitude including the lepton current which plays the role of spin filter to analyze such kinematic dependence on the contribution of longitudinally polarized virtual photon as well as the conservation of angular momentum. We show that the contribution of the longitudinally polarized virtual photon in the kinematics with the hard transverse photon momenta should not be neglected in the analysis of DVCS amplitudes. It is also found that in such kinematics angular momentum is not conserved if the amplitudes are calculated in terms of the reduced operators that define GPDs.

¹DE-FG02-03ER41260

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Date submitted: 08 Jan 2011

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