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Optimized Extraction of Generalized Parton Distributions from Deeply Virtual Compton Scattering[1] PHILIP VELIE, ZAKI PANJSHEERI, KRISEAN ALLEN, BRANDON KRIESTEN, SIMONETTA LIUTI, University of Virginia — Generalized Parton Distributions (GPDs) are a powerful tool that allows greater insight into the internal structure of the nucleon. GPDs define the matrix elements for the deeply virtual Compton scattering (DVCS) process [1]. I will first present a spectator model calculation for the quark, anti-quark and gluon chiral even GPDs $H, E, \widetilde{H}, \widetilde{E}$ in terms of the kinematic variables X, ζ, and t [2]. The model implements the polynomiality and positivity constraints, and it is evolved in perturbative QCD up to next to leading order. I will then illustrate the implementation of computer tensor algebra methods to construct algorithms to optimize the analysis for DVCS, Bethe Heitler, and interference cross-section terms for various beam and target polarization in the formalism of Ref.[3].

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