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Studies of the 3D structure of the proton at JLab¹

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The quark-gluon dynamics manifests itself in a set of non-perturbative functions describing all possible spin-spin and spin-orbit correlations. The Generalized Parton Distributions (GPDs) carry information not only on the longitudinal momentum but also on the transverse position of partons, providing rich and direct information on the orbital motion of quarks. The hard exclusive production of photons and pions provide a variety of spin and azimuthal angle dependent observables, sensitive to the dynamics of quark-gluon interactions. The study of the GPDs is one of the main goals of Jefferson Lab 12 GeV upgrade. In this talk, we present an overview of the current status and some future measurements of hard exclusive processes and extraction of underlying GPDs at Jefferson Lab.

¹Collaboration - CLAS, Team - Jefferson Lab