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Generalized parton distributions through universal moment parameterization: gluons at non zero skewness

Tuesday, 28 March 2023 10:00 (20 minutes)

We present a further step toward a global extraction of gluon generalized parton distributions (GPDs). In our previous work we performed the first global analysis of quark GPDs by including lattice quantum chromodynamics (QCD) calculations, global fitted forward parton distribution functions (PDFs), form factors (FFs), and Deeply Virtual Compton Scattering (DVCS) measurements from JLab and Hadron-Electron Ring Accelerator (HERA) to constrain two quark flavors with leading order QCD evolution. There, the inclusion of DVCS did not probe gluon structure at leading order, as the gluon GPDs only enter through evolution. Here, we include HERA measurements of Deeply Virtual Meson Production (DVMP) in order to study gluon GPDs at non-zero skewness using the same moment parameterization ansatz and within the same global fit with lattice QCD calculations and experimental measurements. We concentrate our study on the production of mesons comprised of heavy quarks such as J/ψ in order to limit quark contributions and thus allow for greater constraint upon the gluons GPDs.

Submitted on behalf of a Collaboration?

No

Participate in poster competition?

No

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