

Constraining DVCS Compton Form Factors Using Lattice QCD calculations

The lattice QCD calculation of gravitational form factors (GFFs) are employed to determine the subtraction constant through dispersion relations of Deeply Virtual Compton Scattering (DVCS), thus constraining significantly the real part of the Compton Form Factors (CFFs) in a global analysis of proton data. This is realised by a synthesis of the dispersion relation and the neural networks, of which the architecture is carefully designed for a reliable extrapolation to unmeasured regime. Our framework allows for adding higher moments of generalized parton distributions (GPDs) from LQCD through dispersion relations beyond leading order into the extraction of CFFs from DVCS data.

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