

Generalized Parton Distributions, Analyticity and Form Factors

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The QCD factorization for hard exclusive amplitudes is compared with their crossing and analytic properties. The crucial role is played by their mathematical structure described by Radon and Abel transforms, leading to “holographic” property of GPDs at LO. These transforms are very different in the even- and odd- dimensional spaces, the latter case related to “creation” GPDs describing, say, the deuteron breakup. The bounds implied by crossing and analyticity for the angular distributions in two-photon processes are obtained. The contributions of different types of QCD factorization and duality between them are considered. The relations of GPDs to (gravitational) formfactors, equivalence principle (EP) and its extension (EEP) are analyzed. EEP is also considered for the case of vector mesons, showing the possible link with AsS/CFT correspondence .