

Explanations for item “Study of hadron structure through GPDs”:

The structure of hadrons can be investigated in more detail using the generalized parton distributions (GPDs). GPDs provide quantitative information on both the longitudinal and transverse distributions of partons inside the nucleon and their intrinsic and orbital angular momenta. GPDs are an essential ingredient of hard exclusive processes such as deeply virtual Compton scattering (DVCS), deeply virtual meson production (DVMP), time-like Compton scattering (TCS), exclusive heavy-vector-meson production (HVMP), and single diffractive hard exclusive processes (SDHEPs). They also contribute to high-energy hadron collisions at the LHC through the central exclusive production (CEP) processes such as exclusive dilepton production with a leading proton. At zero skewness, GPDs connect with the electromagnetic and axial form factors (FFs), which also makes them an essential ingredient of different types of elastic scattering involving hadrons. Therefore, studying GPDs can shed light on various aspects of hadron structure.