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GTMDs in light-front dressed quark model

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GTMDs are the mother distribution functions from which GPDs and TMDs can be derived under a specific limit. GPDs and TMDs have been used extensively in the literature to understand the 3-dimensional spatial and spin structure of hadrons. We study the GTMDs of quarks in the light-front dressed quark model. Recently it was claimed that extraction of GTMDs of quark and gluon is possible in the exclusive double Drell-Yan process and exclusive hard diffractive di-jet production in the deep inelastic scattering. In the experiments, skewness is never zero. This makes it an exciting and compelling case to obtain the skewness dependence of GTMDs. We derive the analytical expression of GTMDs of quarks for non-zero skewness in the light-front dressed quark model. Further application and use of the GTMDs obtained are discussed in the context of orbital angular momentum and spin-orbit correlations.

Session

Heavy Ions and QCD

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