

Transverse Momentum Dependent distributions (TMDs)

Jian-Wei Qiu¹ (presenting author underlined)

¹ Physics Department, Brookhaven National Laboratory, Upton, NY 11973, USA

The information of confined 3D momentum distribution of quarks and gluons inside the nucleon is largely encoded in the transverse momentum dependent parton distributions (TMDs). Owing to the color confinement - the defining property of QCD, having a reliable QCD factorization formalism to connect the partonic dynamics taking place at the short-distance and the spectrum of particles (hadrons and leptons) observed in the detectors is critically important for extracting the TMDs from high energy scattering in hadronic collisions. In this talk, I will review our current understanding and knowledge on TMDs, paying the special attention to the validity of QCD factorization and predictive power, and future opportunities for us to explore the TMDs.