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Probing the Transverse Momentum of Longitudinally Polarized Quarks

Tuesday, 10 December 2024 16:02 (10 minutes)

In this talk, I present the recent results from the MAP Collaboration on the extraction of the quark transverse-momentum-dependent helicity distribution (helicity TMD), which will offer insights into the difference between the three-dimensional motion of quarks with polarization parallel or antiparallel to the longitudinal polarization of the parent hadron. By analyzing experimental data of semi-inclusive deep inelastic scattering off longitudinal polarized targets, we extract the helicity TMD at next-to-next–leading logarithmic (NNLL) perturbative accuracy in the Collins-Soper-Sterman approach.

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