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Non-perturbative contributions from PB-TMDs and CS kernel determination

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With transverse-momentum-dependent parton densities (TMD) obtained from fits to HERA DIS data using the Parton Branching (PB) method, we determine the non-perturbative Collins-Soper (CS) kernel. The CS kernel describes the rapidity evolution of quark TMD parton distribution functions. We use PB-TMD calculations of the Drell-Yan (DY) transverse momentum spectrum at different DY masses. We show that the obtained CS kernel shows, for the first time, reasonable agreement with lattice QCD determinations in the non-perturbative, large b region. We also show that the the results agree with phenomenological extractions of the kernel in the perturbative, low b region.

Submitted on behalf of a Collaboration?

No

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