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Dynamical resolution scale fits for TMDs at Next-to-Leading-Order (NLO)

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The parton-branching solutions of QCD evolution equations have been recently studied. From this approach, a method to construct both collinear and transverse momentum dependent (TMD) parton densities has been formulated. In this formalism, soft-gluon color coherence effects are taken into account by introducing the soft-gluon resolution scale. Both analytical studies and numerical solutions of PB evolution equations in the presence of dynamical resolution scales at Leading-Order (LO) in the strong coupling have been presented. In this talk, we show preliminary results of fits to the high-precision deep inelastic scattering (DIS) structure-function measurements regarding the implications of dynamical resolution scales at Next-to-Leading-Order (NLO) accuracy in the strong coupling. We also illustrate the difference between LO and NLO distributions fits.

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