

Phenomenology of Sudakov Resummation in the CGC Framework

Thursday, November 28, 2019 3:00 PM (20 minutes)

We calculate and compare the differential cross sections for forward Z^0 -boson production at small transverse momentum, in proton-proton and proton-nucleus collisions, using both the collinear and dilute-dense factorization frameworks. In both cases, we implement a Sudakov resummation of the large logarithms generated by soft-gluon emissions, which is essential in order to describe the transverse momentum distribution of forward Z^0 bosons measured at the Tevatron and the LHC. We further compute the nuclear modification factor in the dilute-dense framework, hoping to single out signals of saturation effects at small values of x . Our predictions are compared with those obtained in the collinear factorization framework, using two different nuclear parton distribution functions.

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