Deep inelastic scattering in the dipole picture at next-to-leading order

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We study quantitatively [1] the importance of the recently derived NLO corrections [2,3,4] to the DIS structure functions at small x in the dipole formalism. We show that these corrections can be significant and depend on the factorization scheme used to resum large logarithms of energy into renormalization group evolution with the BK equation. This feature is similar to what has recently been observed for single inclusive forward hadron production [5,6]. Using a factorization scheme consistent with the one recently proposed for the single inclusive cross section, we show that it is possible to obtain meaningful results for the DIS cross sections.

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[6] B. Ducloué, T. Lappi, Y. Zhu, Phys.Rev. D95 (2017) no.11, 114007

Summary

Primary author: HÄNNINEN, Henri (University of Jyväskylä)

Presenter: HÄNNINEN, Henri (University of Jyväskylä)

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