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Improving perturbative calculations for forward physics and saturation

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Forward physics provides invaluable information for the study of saturation in QCD. While the color-glass-condensate constitutes the theoretical framework to study saturation within QCD, there is also a consistent approach that allows for a perturbative factorization of cross sections for forward production in terms of PDFs and parton-level scattering, called Improved TMD factorization. It is valid both for LHC and EIC physics. Furthermore, it can be formulated in momentum space and is ideal for Monte Carlo approaches. We report on progress on the precision of such calculations.

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