

# Single inclusive particle production in pA collisions at forward rapidities at NLO

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We revisit the calculation of the cross section for forward inclusive single hadron production in pA collisions within the hybrid approach. We show that the proper framework to perform this calculation beyond leading order is not the collinear factorization, as has been assumed so far, but the TMD factorized framework. Within the TMD factorized approach we show that all the large transverse logarithms appearing in the fixed order calculation, are resummed into the evolution of the TMD PDFs and TMD FFs with factorization scale. The resulting expressions, when written in terms of TMDs evolved to the appropriate, physically well understood factorization scale, contain no additional large logarithms. The absence of any large logarithms in the resummed result should ensure positivity of the cross section and eradicate the persistent problem that have plagued the previous attempts at calculating this observable in the hybrid approach.

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