

DIS2023: XXX International Workshop on Deep-Inelastic Scattering and Related Subjects



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Small- x resummation of the photon-gluon impact factors

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It is well known that the small x calculations for the variety of observables are characterized by large corrections at the next-to-leading order (NLO). Resummation procedure for the gluon Green's function was constructed some time ago, which takes into account correct collinear limits, through appropriate subtractions of higher order poles and shifts of the leading poles. In the present work we extend the small- x resummation procedure to the photon-gluon impact factors. We analyze the process of the virtual photon - photon scattering taking into account impact factors and gluon Green's function at NLO and perform resummation. We derive the prescription for the collinearly improved impact factors which match the NLO results. We show that such resummation prescription leads to the reduced sensitivity of the cross section on the scale choice and is also stable with respect to changes from LO to NLO improved impact factors.

Submitted on behalf of a Collaboration?

No

Participate in poster competition?

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