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Small x resummation of the photon-gluon impact factor

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It is well known that the evolution in the limit of small Bjorken x acquires large corrections at NLO order. These corrections needs to be resummed by taking into account kinematical constraints and the matching to the DGLAP evolution. This is known as the collinear resummation. In order for the physical cross sections to be consistent with resummation, the impact factors entering them also need to be resummed. In this work we perform the resummation of the photon-gluon impact factor. We analyze the gamma-*gamma* cross section, and perform the consistent matching of the resummed gluon Green's function to the resummed impact factors. We illustrate our the results and their uncertainties numerically by calculating the effects of the resummation on the energy dependence of the cross section.

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