

Photoproduction of three jets in TMD factorization from the CGC

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In this work, we investigate the photoproduction of three jets at low- x . We calculate the cross section using the Color Glass Condensate (CGC) effective theory, allowing us to resum the multiple scattering of the hard partons off the dense semi-classical gluon fields in the highly boosted proton or nucleus. In the so-called correlation limit, in which the sum q_T of the transverse momenta of the jets is smaller than each of the individual momenta K_T , the result can be expanded in the small parameter q_T/K_T and one recovers a (leading-order) TMD factorized expression. This expression consists of the same hard parts one would obtain in a TMD calculation, convolved with what we show are the unpolarized and linearly polarized Weizsäcker-Williams gluon TMDs. We show model predictions for the cross section, ways to disentangle the TMDs with the help of azimuthal momenta, and elaborate on the future outlook.

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