

# XXVIII International Workshop on Deep Inelastic Scattering and Related Subjects



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## NLO impact factor for inclusive photon+dijet production in e+A DIS at small $x$

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We present the first computation of the next-to-leading order (NLO) photon+dijet impact factor in e+A DIS at small  $x$  in the framework of the Color Glass Condensate (CGC) effective field theory. When combined with the recent derivation of JIMWLK small  $x$  evolution to next-to-leading logarithm (in  $x$ ) accuracy, this result provides us with a prediction of the photon+dijet cross-section in e+A DIS to  $O(\alpha_S^3 \ln(1/x))$  accuracy. In the soft photon limit, the Low-Burnett-Kroll soft photon theorem allows us to obtain the first CGC results for inclusive dijet production up to the same accuracy. The comparison of these results with dijet and photon+dijet measurements at a future Electron Ion Collider (EIC) therefore provides a precision test of the systematics of gluon saturation. A remarkable simplification is brought about by the use of momentum space “dressed” quark and gluon propagators in the light cone gauge  $A^- = 0$  which facilitates the extension of our computational techniques to higher loop orders.

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