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NLO+NLL x computation of inclusive photon+dijet production in e+A DIS as a probe of gluon saturation

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We present the first computation of the NLO photon+dijet impact factor in e+A DIS at small x . When combined with the recent derivation of JIMWLK small x evolution to NLL x accuracy, this result provides us with a prediction of the photon+dijet cross-section in e+A DIS to $\mathcal{O}(\alpha_S^3 \ln(1/x))$ accuracy. The comparison of this result with photon+dijet measurements at a future EIC therefore provides a precision test of the systematics of gluon saturation. In the soft photon limit, one obtains a compact representation of the state-of-the-art results for fully inclusive DIS. The novel techniques developed in this computation can also be applied to promote existing LO computations of photon+dijet production in p+A collisions to NLO+NLL x accuracy.

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