

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



Contribution ID: 280

Type: **Parallel talk**

Next-to-leading order photon+jet production

Tuesday, 28 March 2023 11:30 (20 minutes)

Using the CGC effective theory together with the hybrid factorisation, we study forward photon+jet production in proton-nucleus collisions beyond leading order. We first compute the “real” next-to-leading order (NLO) corrections, i.e. the radiative corrections associated with a three-parton final state, out of which only two are being measured. Then we move to the “virtual” NLO corrections to dijet production, in which a gluon loop is included as a part of the amplitude, before or after the measurement. Each of these loop diagrams diverges, and we explain our treatment in order to obtain finite expression for the cross section. We explicitly work out the interesting limits where the unmeasured gluon is either a soft, or the product of a collinear splitting. We find the expected results in both limits: the B-JIMWLK evolution of the leading-order dijet cross-section in the first case (soft gluon) and, respectively, the DGLAP evolution of the initial and final states in the second case (collinear splitting).

Submitted on behalf of a Collaboration?

No

Participate in poster competition?

No

Primary author: MULIAN, Yair

Co-author: ARMESTO PEREZ, Nestor (Universidade de Santiago de Compostela (ES))

Presenter: MULIAN, Yair

Session Classification: WG2

Track Classification: WG2: Small-x, Diffraction and Vector Mesons