

Small-x observables at forward rapidity in pA collisions

Wednesday, 25 May 2016 14:00 (20 minutes)

Forward rapidity observables in high-energy proton-nucleus collisions are optimal for probing gluon saturation effects in the target nucleus. We study two small-x observables at forward rapidity: dijet azimuthal correlations in proton-nucleus collisions, and induced coherent spectrum associated with single parton scattering. Both observables are first analyzed from a CGC (color glass condensate) starting point of view, and then generally expressed in terms of TMD (transverse momentum dependent) gluon distributions. For the dijet azimuthal correlations we derive an improved TMD factorization formula valid for an arbitrary value of the momentum imbalance of the jets. We present preliminary results for the dijet production cross section at forward rapidity for LHC energies, based on the new formula. For the second observable, we first derive general expressions at finite N_c for the medium-induced soft gluon radiation for both, energetic quark and gluon, and then calculate the leading asymptotics in an explicit formula. We compare with previous calculations in different frameworks.

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Session Classification: Parallel