



Contribution ID: 158

Type: **not specified**

## Forward di-jets in p+A collisions in the ITMD framework

*Wednesday, April 18, 2018 9:24 AM (24 minutes)*

We improve the state-of-the-art description of the disappearance of the away-side peak in forward pA collisions at Relativistic Heavy Ion Collider (RHIC) energies in the framework of the Color Glass Condensate (CGC).

Using the recently proposed improved transverse momentum dependent (ITMD) factorization formula for two-particle production in the back-to-back limit, we derive a parameter-free cross section for the production of two hadrons in dilute-dense collisions, in which the TMD gluon distributions describing the saturated targets are obtained by solving the Balitsky-Kovchegov equation with running coupling corrections.

The resulting cross section provides a good description of the disappearance of the away-side peak in d+Au collisions observed in current RHIC data, although non-CGC effects missing in our calculation prevent us from capturing the overall shape of the di-hadron yield as we move away from  $\Delta\phi = \pi$ .

We predict the away-side peak of upcoming p+Au data at  $\sqrt{s} = 200$  GeV to be systematically suppressed by a factor 2 with respect to p+p.

We propose to study the rapidity dependence of the away-side peak suppression as an auxiliary strong proof of gluon saturation in experimental data.

**Primary authors:** MATAS, Marek; MARQUET, Cyrille (CPHT - Ecole Polytechnique)

**Presenter:** MATAS, Marek

**Session Classification:** WG2: Small-x and Diffraction

**Track Classification:** WG2: Small-x and Diffraction