



XXIV QUARK MATTER DARMSTADT 2014

Contribution ID: 82

Type: **Contributed Talk**

The ridge through Colored Glass

Monday 19 May 2014 11:00 (20 minutes)

The ridge in pp, p/d+A and A+A collisions manifest at very high multiplicities. Regardless of whether initial state or final state effects dominate, the physics of very high parton densities is relevant. In this talk, we attempt a synthesis of the state-of-the art in the CGC approach to computing both initial state and final state effects that generate collimated long range rapidity correlations. The emphasis throughout will be on a) quantitative comparisons to data, and b) on open problems in the different approaches that become manifest through such comparisons. We will discuss future measurements that are likely to provide definitive answers regarding the physics underlying this remarkable phenomenon.

References:

- 1) K. Dusling and R. Venugopalan, Initial state triangular azimuthal anisotropy in p+A and A+A collisions”, in preparation.
- 2) B. Schenke, P. Tribedy, and R. Venugopalan, Multiplicity constrained v_n moments in pA and AA collisions in the IP-Glasma model”, in preparation.
- 3) B. Schenke, P. Tribedy and R. Venugopalan, Multiplicity distributions in p+p, p+A and A+A collisions from Yang-Mills dynamics,” *Phys. Rev. C* **89**, 024901 (2014).
- 4) A. Bzdak, B. Schenke, P. Tribedy and R. Venugopalan, Initial state geometry and the role of hydrodynamics in proton-proton, proton-nucleus and deuteron-nucleus collisions,” *Phys. Rev. C* **87**, 064906 (2013).

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Session Classification: Initial state physics

Track Classification: Initial State Physics