



Contribution ID: 130

Type: **not specified**

Jet energy loss in small systems with finite-size effects and running coupling

Saturday, 24 September 2016 09:50 (20 minutes)

In the LHC and RHIC experiments, strong collective behaviors are being observed in high multiplicity events in p-p and p-A collisions suggesting that quark-gluon plasma can be created in such small systems. In this work, we utilize an improved version of MARTINI to calculate the effect of QGP on the jet energy loss in p-A collisions with the well-calibrated 3+1D hydrodynamics medium. The two important improvements implemented in this version of MARTINI are the finite medium size effect as formulated by Caron-Huot and Gale [1], and the running coupling effect as proposed by Young, Schenke, Jeon and Gale [2]. Since the system we are dealing with is small, both of these improvements are critical. In this work, we first present that this improved model provides better descriptions of the nuclear modification factor (R_{AA}) in Pb-Pb collisions at 2.76TeV. Then we show a systematic measurement of jet quenching in small systems can provide a strong evidence of QGP formation. In addition, harmonic flows of energetic partons and rapidity dependence of R_{pA} in several collision systems will be highlighted.

[1] S. Caron-Huot and C. Gale, Phys. Rev. C82, 064902 (2010), arXiv:1006.2379

[2] C. Young, B. Schenke, S. Jeon, and C. Gale, Nucl. Phys. A910-911, 494 (2013), arXiv:1209.5679

Summary

Presentation type

Oral

Primary author: PARK, Chanwook (McGill University)

Presenter: PARK, Chanwook (McGill University)

Session Classification: Parallel Session I: Hard Probes in p+p and p+A Collisions (I)