



Contribution ID: 12

Type: **Talk**

Tomography of QGP with jet asymmetries

Thursday 25 July 2013 15:20 (20 minutes)

Within a multi-phase transport (AMPT) model, the transverse momentum asymmetries for γ -jet and di-jet are studied in Pb+Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV. A large asymmetry is produced by strong interactions between jets and partonic matter rather than by hadronic interactions only. It is demonstrated that final hadronic processes such as hadronization and hadronic rescatterings have little effects on the formed asymmetry. The asymmetry evolution functions are extracted to disclose that final asymmetry is driven by both initial asymmetry and partonic jet energy loss, which is consistent with jet energy loss in a hot and strongly interacting partonic medium. The imbalance or asymmetry ratio, e.g. $x_{j\gamma}$ or A_J , is sensitive to both production position and passing direction of γ -jet and di-jet, which could enable a detail tomographic study on the formed partonic matter by selecting different asymmetry ratio ranges experimentally.

References:

[1]Guo-Liang Ma, arXiv: 1302.5873

[2]Guo-Liang Ma, arXiv: 1304.2841

Primary author: MA, Guo-Liang (Shanghai INstitute of Applied Physics (SINAP), CAS)

Presenter: MA, Guo-Liang (Shanghai INstitute of Applied Physics (SINAP), CAS)

Session Classification: Hard Probes