Contribution ID: **268** Type: **Poster**

The Fox-Wolfram Moment of jet production in relativistic heavy ion collisions

We present the first theoretical investigation of Fox-Wolfram moments (FWMs) for multi-jet productions in relativistic heavy ion collisions. In this work jet productions in p+p collisions are computed with a Monte Carlo event generator SHERPA, while the Linear Boltzmann Transport model is utilized to simulate the multiple scattering of energetic partons in the hot and desne QCD matter. The event-normalized distributions of the lower-order FWM, H_1^T in p+p and Pb+Pb collisions are calculated. It is found that for events with jet number $n_{\rm jet} = 2$ the H_1^T distribution in Pb+Pb is suppressed at small H_1^T while enhanced at large H_1^T region as compared to p+p. For events with $n_{\rm jet} > 2$, the jet number reduction effect due to jet quenching in the QGP decreases the the H_1^T distriubtion at large H_1^T in Pb+Pb relative to p+p. Analyses indicate that medium modifications bring the two jets in two harder pairwise events closer together, while the softest jets in the pairwise events move further apart. These combined effects then contribute to the modification of the event shape with $n_{\rm jet} > 2$ in Pb+Pb reaction.

Category

Theory

Collaboration

Author: KONG, WeiXi (Central China Normal University)

Co-authors: ZHANG, Ben-Wei (Central China Normal University); Prof. WANG, Enke (South China Normal University)

Presenter: KONG, WeiXi (Central China Normal University)

Track Classification: 1. Jets modification and medium response