Contribution ID: **444** Type: **Poster**

Light and heavy flavor jet quenching at RHIC and the LHC energies

Tuesday, May 15, 2018 7:10 PM (30 minutes)

The study of hard jets and their interactions with the traversed medium provides a very improtant tool to probe the quark-gluon plasma produced in relativistic heavy-ion collisions. In this work [1], we study both light and heavy flavor jet quenching on the same footing utilizing a Boltzmann transport model including both elastic and inelastic parton-medium interactions within perturbative QCD. The dynamical evolution of the QGP medium that hard jets probe is simulated with relativistic hydrodynamics that has been tuned to describe the soft hadron production at RHIC and the LHC. Our numerical results can simultaneously describe the experimental data on both light and heavy flavor hadron suppressions for different centralities at both RHIC and the LHC heavy-ion collisions. Detailed analysis show that the initial parton spectra, the details of the energy loss mechanism, and the shapes of fragmentation functions all play important role in understanding the difference between the nuclear modifications of light and heavy flavor hadrons. The temperature, flavor and energy dependences of the jet quenching parameter $\hat{q}$ are quantitatively extracted. We further study the correlations between light and heavy flavor hadrons.

[1] S. Cao, T. Luo, G.-Y. Qin, X.-N. Wang, arXiv:1703.00822, Phys.Lett. B, in press; arXiv:1605.06447, Phys.Rev. C94 (2016) no.1, 014909.

Content type

Theory

Collaboration

Centralised submission by Collaboration

Presenter name already specified

Primary author: QIN, Guang-You (Central China Normal University)

Presenter: QIN, Guang-You (Central China Normal University)

Session Classification: Poster Session

Track Classification: Jet modifications and high-pT hadrons