Contribution ID: **398** Type: **Poster**

$b\bar{b}$ dijet angular correlations in Pb+Pb collisions at $\sqrt{s}$= 8.8 TeV

Tuesday, 15 May 2018 19:10 (30 minutes)

Heavy flavoured jets are important in many of today's studies both as tests of QCD and as probes of hot and dense medium created shortly after the hard scattering. We notice that recently $b\bar{b}$ dijet correlations in proton-proton collisions have been measured by the CMS and ATLAS collaborations at the LHC, NLO+PS p+p baseline could give a rather perfect description of the experimental data than PYTHIA. Moreover detailed mechanisms of heavy flavoured jets propagation and energy loss in dense QCD matter are not yet fully investigated.
In this talk, we present the first predictions of the $b\bar{b}$ dijet angular correlations in Pb+Pb collision. In this work, a NLO+PS event generator SHERPA has been employed to give the p+p baseline and events, A Langevin evolution is used to describe the heavy quark evolution ,and the higher-twist approach is implemented to simulate the radiative energy loss of the gluon,heavy and light quarks simultaneously,and the hard-thermal-loop calculation is used to describe the collisional energy loss of light quarks and gluon. We predict the azimuthal angle $\Delta\phi$, angular distance ΔR , and rapidity variables y_B distributions of the normalized $b\bar{b}$ dijet production at the LHC 8.8 TeV. We find the energy loss of the $b\bar{b}$ dijet will suppress and broden the near side(small $\Delta\phi$)peak and also enhance and sharp the away side (near $\Delta\phi = \pi$) peak. We have also calculated the distribution of transverse momentum p_T of $b\bar{b}$ dijet, the transverse momentum imbalance X_j of back-to-back $b\bar{b}$ dijet pairs and the flavour asymmetry A_b of mixed-flavour dijet pairs to gain new insight into heavy flavour dynamics in the quark-gluon plasma.

Content type

Theory

Collaboration

Centralised submission by Collaboration

Presenter name already specified

Primary author: WANG, Sa (Central China Normal University)

Co-authors: Dr DAI, Wei (Central China Normal University); ZHANG, Shanliang; ZHANG, Ben-Wei (Central China Normal University); WANG, Enke (Central China Normal University)

Presenter: WANG, Sa (Central China Normal University)

Session Classification: Poster Session

Track Classification: Correlations and fluctuations