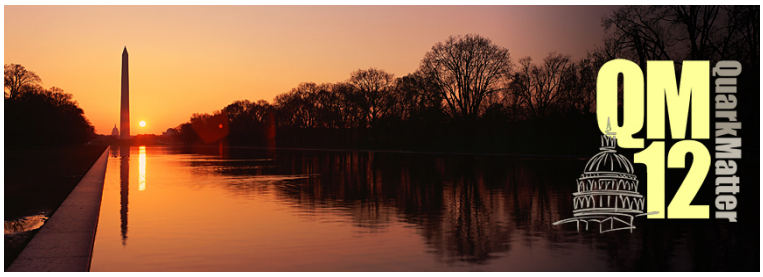

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Dijet asymmetry A_J within a partonic Boltzmann transport model

Thursday, August 16, 2012 4:00 PM (2 hours)

Recent experimental data measured in \sqrt{s}=2.76 TeV Pb+Pb collisions by ATLAS and CMS showed a significant imbalance in the transverse momenta of the two reconstructed jets with the highest transverse momenta. This momentum imbalance is assumed to be caused by the different energy and momentum loss of the di-jets by scatterings within the created medium. To investigate this momentum loss we extended the transport model BAMPS which solves the full 3+1D Boltzmann equation for partons based on pQCD cross sections. One feature of BAMPS is the stochastic modeling of 2 -> 2 as well as 2 <-> 3 scattering processes. We show that the simulations of the momentum imbalance A_J of full reconstructed jets within BAMPS are in excellent agreement with the experimental data. Due to the available particle information in configuration as well as momentum space within such a transport model, it is possible to reproduce the entire evolution of the reconstructed jets within the medium and gain a deeper understanding of the emerging jet shapes. With this information we explain the momentum imbalance of di-jets by different in-medium path lengths and thus different energy and momentum loss at parton-level.

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