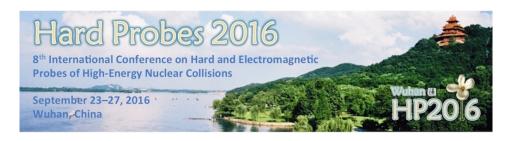
Hard Probe 2016



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The x and scale dependence of the transport coefficient \hat{q}

Sunday, 25 September 2016 12:00 (20 minutes)

We take a closer look at the single particle nuclear modification factor (R_{AA}) and azimuthal anisotropy (v_2) of leading hadrons at high transverse momentum (p_T) at both RHIC and LHC collision energies. We focus on the established reduction in the interaction measure \hat{q}/T^3 between RHIC and LHC, as discovered by the JET collaboration. The centrality dependence of the R_{AA} and v_2 at both these collision energies strongly suggests that the reduction is not caused by a temperature dependence in the ratio of \hat{q}/T^3 but rather by an energy dependence of \hat{q} .

We study this dependence by introducing an x dependence in the distribution function that is integrated to obtain \hat{q} . We conjecture on possible forms of a scale dependence by relating \hat{q} to an object similar to a transverse momentum dependent parton distribution function (TMDPDF). The ensuing operator product is then related to quantities that may be estimated in lattice QCD.

Summary

Presentation type

Oral

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