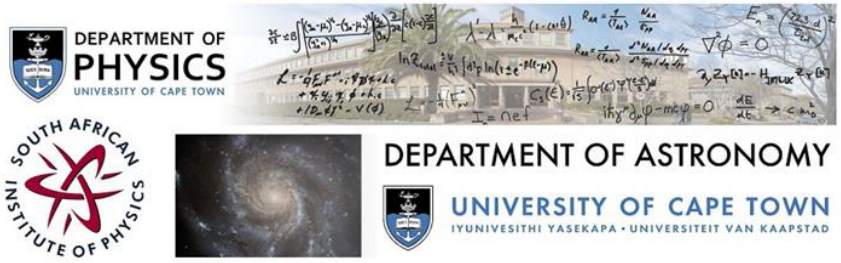

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AdS:CFT predictions for momentum correlations of bbbar pairs in heavy ion collisions.

Friday, 8 July 2016 14:20 (20 minutes)

Abstract content
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We use an energy loss model sensitive to thermal fluctuations to compute the azimuthal and momentum correlations of bbbar pairs traversing a strongly coupled plasma from Pb+Pb collisions at LHC (&radic s=2.76TeV). The azimuthal correlations are compared with those from perturbative QCD based simulations. When restricted to leading order production processes, we find that the strongly coupled correlations of high transverse momentum pairs (>4GeV) are broadened less efficiently than the corresponding weak coupling based correlations, while low transverse momentum pairs (1-4GeV) are broaded with similar efficiency, but with an order of magnitude more particles ending up in this momentum class. The strong coupling momentum correlations we compute account for initial correlations and reveal that the particle pairs suppressed from intially high momenta to the low momentum domain do not suffice to explain the stark difference to the weak coupling results in momentum correlations for 1-4GeV.
From this, we conclude that heavy quark pairs are more likely to stay correlated in momentum when propagating through a strongly coupled plasma than a weakly coupled one.

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