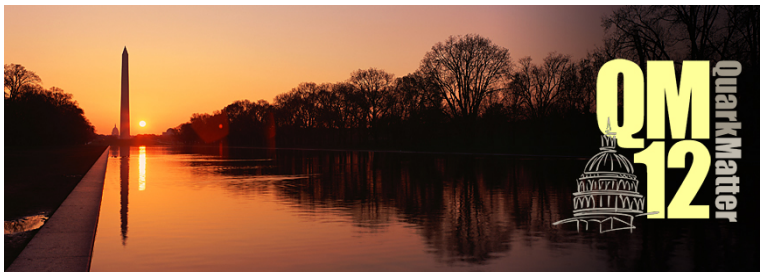

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Photon and Dilepton Emission from the Hadronization Process in Heavy Ion Collisions

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

A new source of photon and dilepton emission from nuclear matter undergoing phase transition from partonic to hadronic degrees of freedom is studied. Electromagnetic radiation can be emitted when quark antiquark pairs recombine into pions and other hadrons. The photon and dilepton production rates are found to be comparable to those in quark gluon plasma and hadronic matter around the critical temperature. We compute the photon and dilepton yields from such processes for Au+Au collision at RHIC(\sqrt{s}=200GeV) by convoluting the rates with a hydrodynamic simulation of the system. A comparison of the results to PHENIX and STAR measurements shows that dileptons from hadronization processes could partially explain the excess of low mass dilepton. The transverse momentum spectrum exhibits a smaller effective temperature than the QGP contribution. The elliptic flow of dileptons from the hadronization process behaves similar to the elliptic flow of dileptons from hadronic matter. Photon yields from these processes are not found to be important compared to QGP emission.

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