Quark Matter 2012



Contribution ID: 119

Type: Oral Presentation

Thermal dileptons in high-energy heavy ion collisions with 3+1D relativistic hydrodynamics

Wednesday 15 August 2012 08:30 (20 minutes)

The penetrating nature of dileptons makes them suitable probes to explore the properties of the stronglyinteracting medium created in relativistic nuclear collisions. This study investigates thermal dilepton production using MUSIC (a Monotone Upstream-centered Scheme for Ion Collisions): a 3+1D hydrodynamic simulation with or without shear viscosity. We utilize dilepton emission rates that are derived from in-medium hadronic spectral functions, and from pQCD. In addition to the invariant mass and momentum distributions, the elliptic flow of lepton pairs is calculated, and the effects of a finite shear viscosity coefficient are also analyzed. We present results appropriate for measurements by the PHENIX and STAR collaborations, and make predictions for the LHC.

Primary author: VUJANOVIC, Gojko (McGill University)

Co-authors: SCHENKE, Bjoern (Brookhaven National Laboratory); GALE, Charles (McGill University); YOUNG, Clint (McGill University); RAPP, Ralf (Texas A&M University); JEON, Sangyong (McGill University)

Presenter: VUJANOVIC, Gojko (McGill University)

Session Classification: Parallel 3C: Electro-Weak Probes (Chair J. Kapusta)

Track Classification: Electroweak probes