

12th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



Contribution ID: 131

Type: **Oral presentation**

Measurements of thermal dielectron and QGP temperature in isobar collisions at $\sqrt{s_{NN}} = 200$ GeV

Tuesday 24 September 2024 11:50 (20 minutes)

Lattice QCD predicts a phase transition from hadronic matter to the Quark-Gluon Plasma (QGP) at high temperature and small baryon chemical potential. Thermal dileptons can be produced throughout the entire evolution of a collision and do not involve strong interactions. As a result, they can carry information about their emission source, and are therefore suggested as the ideal probes of hot medium created in the heavy-ion collision. In particular, the invariant mass distribution of thermal dielectrons is not subjected to blue-shift effects, which enables the extraction of the average temperature of the hot QCD medium at different stages of the evolution.

In this talk, measurements of the dielectron invariant mass spectra in Ru+Ru and Zr+Zr collisions at $\sqrt{s_{NN}} = 200$ GeV with the STAR experiment will be presented. The average temperature extracted from the thermal dielectron in the low-mass and intermediate-mass regions will be shown as a function of N_{part} . Furthermore, comparisons to previous results and the physics implications will also be discussed.

Category

Experiment

Collaboration

STAR

Primary author: LUO, Jiaxuan

Presenter: LUO, Jiaxuan

Session Classification: Parallel Session 16

Track Classification: 4. Electromagnetic and electroweak probes