

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

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4
5 **Abstract**

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

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