

1 Thermal dielectron measurement in Au+Au  
2 collisions with STAR BES-II data

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4 According to lattice Quantum Chromodynamics (QCD) prediction, there  
5 exists a phase transition from hadronic matter to Quark Gluon Plasma (QGP)  
6 at extreme high temperatures or baryon densities. Thermal dielectrons provide  
7 a unique probe to study the properties of the hot QCD medium created in  
8 relativistic heavy ion collisions. They can be emitted during the whole evolution  
9 of the medium and do not interact strongly with the medium. The invariant  
10 mass distribution of thermal dielectrons in different mass regions enables us to  
11 extract the temperature of the hot QCD medium in different phases.

12 The STAR experiment collected high statistic datasets in Au+Au collisions  
13 at  $\sqrt{s_{NN}} = 7.7 - 19.6$  GeV during the Beam Energy Scan program phase II (BES-  
14 II). In this talk, preliminary results of the dielectron invariant mass spectra  
15 in Au+Au collisions at  $\sqrt{s_{NN}} = 9.2$  GeV will be presented and discussed in  
16 the context of other BES-II dielectron results. Furthermore, the temperature  
17 extracted from the spectra at these energies and the physics implications will  
18 also be discussed.