

1 Thermal dielectron measurements in Au+Au
2 collisions at BES-II energies with the STAR
3 experiment

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5 Dielectrons, emitted during the evolution of the hot and dense QCD medium
6 created in relativistic heavy-ion collisions, offer an effective probe of the hot
7 medium, as they are non-strongly interacting. The dielectron emission rate is
8 proportional to the medium's electromagnetic spectral function. In the dielec-
9 tron mass region $M_{ee} < 1 \text{ GeV}/c^2$, the spectral function probes the in-medium
10 ρ meson propagator which is sensitive to the medium's properties including
11 the total baryon density and the temperature. Measuring thermal dielectron
12 production allows us to investigate the microscopic interaction mechanism be-
13 tween the electromagnetic current and the medium, along with exploring various
14 medium properties.

15 In this poster, we will report STAR measurements of thermal dielectrons
16 produced in Au+Au collisions at $\sqrt{s_{NN}} = 7.7, 9.2, 11.5, 14.6$, and 19.6 GeV . The
17 results will include the electron angular distributions in the virtual photon rest
18 frame, thermal dielectron invariant mass spectra, excess yields and temperature
19 measurements. In addition, these new preliminary results will be compared
20 to the results from STAR BES-I and theoretical model calculations for the
21 discussions of the physics implications.