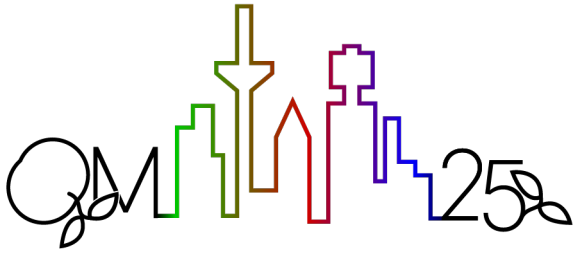

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Thermal dielectron measurements in Au+Au collisions at BES-II energies with the STAR experiment

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

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

Category

Experiment

Collaboration (if applicable)

STAR Collaboration

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Session Classification: Poster session 2

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