

Measurement of dielectron spectra in Au+Au collisions at $\sqrt{s_{\text{NN}}} = 200$ GeV utilizing the Heavy Flavor Tracker in the STAR experiment

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Virtual photons decaying into electron-positron pairs are excellent tools to study the medium created in relativistic heavy-ion collisions. Due to their minimal final-state interactions with the partonic or hadronic medium, they retain the information imprinted at the time of their creation. Different kinematic regions can be used to disentangle various contributions to the dielectron spectrum. While low-mass dielectrons ($M_{ee} < M_\rho$) are sensitive to modifications of the ρ -meson inside hot and dense matter, the intermediate mass range (IMR, $M_\phi < M_{ee} < M_{J/\Psi}$) of the spectrum can serve as a QGP thermometer. However, the temperature measurement in this mass region has been prohibited so far at RHIC due to the unknown shape of the background contribution from semi-leptonic decays of heavy quarks. The Heavy Flavor Tracker (HFT) installed at STAR in 2014 allows to better understand this contribution by providing high-precision tracking information.

In this poster, the first measurement of the dielectron spectra with the HFT will be presented. The contribution from semi-leptonic decays of heavy quarks in the IMR will be discussed and the results will be put in the context of previous e^+e^- measurements at the same energy.