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The measurement of non-photonic electrons in STAR

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Hot and dense matter in which quarks and gluons are deconfined is created in heavy-ion collisions at RHIC. The properties of this strongly interacting matter, Quark-Gluon Plasma, could be studied using heavy quarks, namely charm and bottom. Due to their large masses, they are produced during the initial phase of heavy ion collisions via gluon fusion. Non-photonic electrons (NPE) are mainly produced by semileptonic decays of charmed and bottomed hadrons, hence the study of NPE in hadron-hadron and ion-ion collisions provides the information about heavy quarks production as well as the medium properties. The nuclear modification factor of NPE measured in central Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV at STAR is comparable to that of light hadrons. NPE v_2 measurement is necessary to distinguish between different energy loss scenarios and can be a good proxy to reveal heavy flavor collectivity, which can improve our understanding of the medium thermalization.

This talk presents the recent STAR measurements of NPE p_T spectrum, and its suppression in Au+Au $\sqrt{s} = 200$ GeV, and azimuthal anisotropy at $\sqrt{s_{NN}} = 39, 62.4$ and 200 GeV. The analysis status for d+Au collisions will also be reported.

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