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D_s^\pm meson production in Au+Au collisions at $\sqrt{s_{NN}}=200$ GeV in STAR

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Heavy quarks, predominantly produced in hard scattering processes at the initial stages of heavy-ion collisions, are considered as excellent probes to the strongly interacting deconfined medium formed in these collisions. In particular the $D_s(c\bar{s}/\bar{c}s)$ production is expected to be affected by both the strangeness enhancement and the primordial charm quark production. Thus the modification of the D_s meson spectra in heavy-ion collisions provides a new interesting probe to study key properties of the hot nuclear medium.

The Heavy Flavor Tracker, installed into the STAR experiment since 2014, is designed to extend STAR's capability of measuring heavy flavor production via the topological reconstruction of displaced decay vertices. It provides a unique opportunity for precise measurement of the D_s meson production in heavy-ion collisions at RHIC energies. We will present the measurement of D_s meson production via the decay channel $D_s \rightarrow \phi(1020) + \pi$ in Au+Au collisions at $\sqrt{s_{NN}}=200$ GeV. Preliminary results on the nuclear modification factor (R_{AA}) and the production ratio D_s/D^0 will be presented.

On behalf of collaboration:

STAR

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