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Electrons from open heavy flavor decays in central U+U collisions at STAR

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Properties of a hot and dense strongly interacting form of matter called the Quark-Gluon Plasma (QGP) are being studied in ultrarelativistic heavy-ion collisions at the Relativistic Heavy Ion Collider (RHIC). Heavy quarks are created during early stages of heavy-ion collisions in hard processes before the QGP is formed. Their identities are not lost during the evolution of the QGP and subsequent phases, which makes them a good probe for the study of the properties of the QGP. Non-Photonic Electrons (NPE) that originate from semileptonic decays of D and B hadrons can serve as a good proxy for heavy flavor quarks. The nuclear modification factor R_{AA} of NPE is sensitive to the interaction of heavy quarks with the QGP and thus the QGP properties.

Measurements of NPE R_{AA} have revealed a strong suppression at high p_T in Au+Au collisions at $\sqrt{s_{NN}} =$ 200 GeV at the Relativistic Heavy Ion Collider. In the year 2012 STAR collected data in U+U collisions at $\sqrt{s_{NN}} = 193$ GeV. In the most central U+U collisions a higher energy density can be achieved than that in Au+Au collisions, which is expected to enhance the suppression of NPE. In this poster the preliminary results on NPE R_{AA} with $1.2 < p_T < 6.0$ GeV/c in 0-5% most central U+U collisions will be presented and compared to those in Au+Au collisions.

On behalf of collaboration:

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