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Measurement of heavy-flavor electron production in Au+Au collisions at $\sqrt{s_{NN}} = 54.4$ GeV at STAR

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Studying heavy-flavor production in heavy-ion collisions (HIC) can improve our understanding of parton interactions with the Quark-Gluon Plasma (QGP). Due to their significant mass, heavy quarks (charm and bottom) are mainly produced in the initial phase of high-energy HIC, when hard scatterings are prevalent, and thus experience the entire evolution of the QGP. One way to study heavy quarks is to measure Heavy-Flavor Electrons (HFE) - electrons emitted from the semi-leptonic decays of heavy-flavor hadrons.

In this contribution, we will present the HFE measurement at low transverse momentum (p_T) in Au+Au collisions at $\sqrt{s_{NN}} = 54.4$ GeV using data taken in 2017 by the STAR experiment. The strong HFE suppression was already observed in the central Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV. The measurement of heavy-flavor quark central-to-peripheral nuclear modification factors below the RHIC top energy will provide new insights into the collisional energy loss that is dominant at low p_T and will complement the existing results at $\sqrt{s_{NN}} = 200$ GeV and the recent HFE elliptic flow measurement at $\sqrt{s_{NN}} = 54.4$ GeV.

Auteur principal: PROZOROVA, Veronika Dmitrijevna (Czech Technical University in Prague FNSPE)

Orateur: PROZOROVA, Veronika Dmitrijevna (Czech Technical University in Prague FNSPE)

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