

Production of open-charm hadrons in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV measured by the STAR experiment

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Charm quarks are primarily produced at early stages of ultra-relativistic heavy-ion collisions and can therefore probe the Quark-Gluon Plasma (QGP) throughout its whole evolution. Final-state open-charm hadrons are commonly used to experimentally study the charm quark interaction with the QGP. Thanks to the precise secondary vertex reconstruction provided by the Heavy Flavor Tracker (HFT), STAR is able to directly reconstruct D^\pm , D^0 , D_s , and Λ_c^\pm via their hadronic decay channels. Moreover, the topological cuts for signal extraction are optimized using supervised machine learning techniques. In this talk, a selection of recent open charm results from the STAR experiment, measured in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV, will be discussed together with their physics implications.

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