

Measurement of Λ_c baryon production
in Au+Au collisions at $\sqrt{s_{\text{NN}}} = 200$ GeV
with the STAR experiment

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Λ_c is the lightest baryon containing a charm quark and, as such, presents a unique probe to study the behavior of charm quarks in the hot and dense QCD medium created in ultra-relativistic heavy-ion collisions. Together with the measurement of the D^0 meson, we can study the various modes of charm quark hadronization in heavy-ion collisions and bring additional insights into the quark coalescence process in the strongly coupled quark-gluon plasma. Λ_c baryons have an extremely short lifetime ($c\tau \sim 60 \mu\text{m}$) which makes the reconstruction experimentally challenging. The Heavy Flavor Tracker (HFT), installed at the STAR experiment between the years 2014–2016, has shown high efficiency and an unparalleled pointing resolution that can facilitate the Λ_c reconstruction in heavy-ion collisions. In 2014, STAR collected 900 million minimum bias Au+Au collisions at $\sqrt{s_{\text{NN}}} = 200$ GeV. In this talk, we will present the reconstruction of Λ_c baryons via hadronic decays using this data sample. Moreover, the Λ_c to D^0 yield ratio and its comparison to theoretical calculations will be shown.