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Strange hadron production in d+Au collisions at √sNN = 200 GeV using the STAR detector

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Strangeness production has been suggested as a sensitive probe to the dynamics of the deconfined matter created in heavy-ion collisions. Ratios of particle yields involving strange particles are often utilized to study properties of the nuclear matter at freeze-out, such as the strangeness chemical potential and the chemical freeze-out temperature. The d+Au collisions bridge the multiplicity gap between p+p and Au+Au collisions and can provide insight to the role of event multiplicity in strange hadron production. The study of strange hadrons in d+Au collisions can also help to understand their cold nuclear matter effects, a necessary ingredient for interpreting similar measurements in heavy-ion collisions.

In this poster, we will present new measurements on the production of strange hadrons (${K_S}^0$, Λ) for different rapidity intervals in d+Au collisions at $\sqrt{s_{\rm NN}} = 200$ GeV, recorded by the STAR experiment in 2016. We will report transverse momentum ($p_{\rm T}$) spectra, $p_{\rm T}$ integrated yield dN/dy, average transverse momentum, yield ratios, nuclear modification factors, and rapidity asymmetry ($Y_{\rm Asym}$) for these strange hadrons. The physics implications of these measurements on the collision dynamics will be discussed.

Category

Experiment

Collaboration (if applicable)

STAR COLLABORATION

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