Production of π, K, and $p(\bar{p})$ in d+Au collisions at $\sqrt{s_{\rm NN}}$ = 19.6, 39, and 62.4 GeV

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Measurements of identified particles in d+Au collisions will provide fundamental information for understanding cold nuclear matter effects on particle production, such as Cronin enhancement, nuclear shadowing, and gluon saturation. It will also be helpful to study particle production mechanisms in the hot QGP droplet.

In this talk, we will present the working progress for measurements of π, K, and $p(\bar{p})$ production in d+Au collisions at $\sqrt{s_{\rm NN}}$ = 19.6, 39, and 62.4 GeV from STAR collaboration. The particle yield and ratio will be studied as a function of transverse momentum, multiplicity, and collisions energies. Such measurements will be compared with those in Au+Au collisions with the same collisions energy and participant for further understanding the cold or hot nuclear effect.