Strange hadron production in Au+Au collisions at $\sqrt{s_{\rm NN}} = 3$ GeV from STAR experiment

Yingjie Zhou[1] (for the STAR Collaboration)

1 Central China Normal University

Abstract

Strangeness production has been suggested as a sensitive probe to the early-time dynamics of the nuclear matter created in heavy-ion collisions. Transverse momentum distributions and yields of strange hadrons provide important information about the particle production mechanisms and help us to understand the properties of the created medium and its evolution in these collisions. RHIC Beam Energy Scan (BES) program covers a wide range of energies from $\sqrt{s_{\rm NN}} = 200$ GeV to 3 GeV. Of particular interest is the high baryon density region which is accessible through the STAR fixed-target (FXT) program, extending the energy reach down to 3 GeV.

This presentation will report on the first measurements of strange hadron production in Au+Au collisions at $\sqrt{s_{\rm NN}} = 3$ GeV. These results include the transverse mass spectra, rapidity density distributions, particle ratios, and their centrality dependence of strange hadrons ($K^{\pm}$, K^0_S, ϕ, Λ, Ξ^-). These new results will be compared with those from higher collision energies and discussed within the framework of model calculations.