Baryon-Strangeness Correlations in Au+Au Collisions at RHIC-STAR

Hanwen Feng
(for the STAR Collaboration)

Central China Normal University

Abstract

Fluctuations and correlations of conserved charges are sensitive observables to study QCD phase structure. In particular, the baryon-strangeness correlations may be used to study the change of phases in the matter created in heavy-ion collisions.

In this work, we present the measurements of baryon-strangeness correlations in Au+Au collisions from beam energy scan program at STAR. This is the first systematic analysis of baryon-strangeness correlations on the collision energy and centrality dependence including strange hadrons K^+, Λ and Ξ^- along with their corresponding anti-particles. Physics implications will be discussed by comparing these new results with calculations from Lattice Gauge Theory, thermal model as well as a hadronic transport model.