

Measurements of Λ - Λ and Ξ - Ξ Correlation Functions in Au+Au collisions at $\sqrt{s_{\text{NN}}} = 200$ GeV at RHIC-STAR

University of Tsukuba

Moe Isshiki (for the STAR Collaboration)

Hyperon-hyperon interaction is not well understood theoretically and experimentally. In heavy-ion collisions at high energy, a large number of particles including various different kinds of baryons such as multi-strangeness hyperons are generated via different mechanisms, for example, through the quark coalescence or recombination. Study of strangeness particles is important to probe hadron production and possible earlier freeze-out of strangeness baryons. It is also expected to lead to clarification of the existence of bound state of H-dibaryon. The scattering parameters, which are physical quantities and tell us whether or not the bound state exists, can be extracted by measuring the correlation of two particles in the low relative momentum. For this reason, the measurement of correlation functions of (multi-)strangeness particles is important to clarify baryon and hyperon interactions in the final state quantitatively.

In this talk, status of Λ - Λ and $\bar{\Lambda}$ - $\bar{\Lambda}$ correlations in Au+Au collisions at $\sqrt{s_{\text{NN}}} = 200$ GeV with a largely improved statistics compared to previous measurements will be reported. Also, the first measurement of Ξ - Ξ and $\bar{\Xi}$ - $\bar{\Xi}$ correlations will be shown.