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Measurement of $K_s^0 - K_s^0$ correlation function in Au+Au collisions at the high baryon density region

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Two-particle correlation analyses are often used to study the spatial and temporal extension of particle-emitting source in high-energy nuclear collisions. Precise information on the final state interactions amongst the particles under study can also be extracted from the measurement. It is particularly interesting to study the energy dependence of the extracted source size at the moment of freeze-out. Two-kaon correlations are an important supplement to those of pions, as they are less affected by resonance decays and they have smaller hadronic cross-section.

In this poster, the measurements of $K_s^0 - K_s^0$ correlations in Au+Au collisions with the fixed-target mode at $\sqrt{s_{NN}} = 3.0, 3.2, 3.5,$ and 3.9 GeV, by the STAR experiment will be presented. This presents the first measurements of the systematic study on femtoscopic correlations involving strangeness at the high baryon density region. The energy dependence of particle-emitting source parameters will be compared with transport model calculations.

Category

Experiment

Collaboration (if applicable)

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