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Type: Talk

Measurements of Kaon Femtoscopy in Au+Au Collisions at $\sqrt{s_{NN}} = 3.0 - 4.5$ GeV by the STAR experiment

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Two-particle correlations are used to extract the space-time and dynamical information of the particle-emitting source created in heavy-ion collisions. The source radii extracted from them characterize the system at the kinetic freeze-out, i.e., the last stage of particle interactions. Kaons can provide a more direct view of the particle-emitting source than pions as they have smaller hadronic cross section and less contribution from long lifetime resonances. It is particularly interesting to study the energy dependence of the extracted kaon source parameters.

In this talk, the measurements of neutral $K_s^0 - K_s^0$ and charged $K^+ - K^+$ correlation functions from Au+Au fixed-target collisions at $\sqrt{s_{NN}} = 3.0, 3.2, 3.5, 3.9$ and 4.5 GeV, measured by the STAR experiment, will be presented. This is the first such systematic measurement of correlation functions involving strangeness in the high baryon region. These new results will be compared with those from pion femtoscopic measurements and will be discussed with the calculations from hadronic transport model.

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Classification de Session: Track4-Bulk&Phase

Classification de thématique: Bulk matter phenomena, QCD phase diagram and Critical point