

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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(for the STAR Collaboration)

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

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