K^+K^+ correlation functions in Au+Au collisions at 3.0 - 3.9 GeV

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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 these correlations 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.

In this poster, the measurements of K^+K^+ correlation functions in Au+Au collisions at $\sqrt{s_{NN}} = 3.0$, 3.2, 3.5, and 3.9 GeV recorded by the STAR experiment will be presented. One-dimensional source size (R_{inv}) and correlation strength parameter (λ) of the system are extracted from the correlation functions using the Bowler-Sinyukov formula. The comparison of the measured radii with the predictions from UrQMD+CRAB will be discussed.