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Pion and kaon Bose-Einstein correlations from the BES program at STAR

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In high energy heavy-ion collisions, a hot and dense strongly interacting system of deconfined quarks and gluons (sQGP) is created. The Beam Energy Scan (BES) program at RHIC was performed to map the QCD phase diagram. Model calculations suggest, in high energy collisions, the transition from the hadronic matter to the deconfined state is a smooth crossover, at lower energies, the phase transition could be first order and there is a QCD critical point between the smooth cross-over and the first order region. The correlation femtoscopy method allows one to measure the space and time extent of the particle emitting source.

In this talk, we present preliminary results of the measurement of like-sign two-pion and two-kaon correlations from the BES program at STAR. Since kaons contain a strange quark and have smaller cross-sections with the hot hadronic matter compared to pions, they may provide additional information about the system evolution. The extracted radius parameters of kaons are presented as a function of collision centrality and transverse mass (m_T) and compared to those for pions.

Topic:

Topic: Heavy Ion Collisions and Critical Phenomena

Summary

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