

Measurement of proton- Ξ correlation function in Au+Au Collisions at $\sqrt{s_{NN}} = 200$ GeV by STAR experiment at RHIC

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The study of baryon-baryon interactions is important to understand existence of strangelets and various exotic hadrons, and for modeling of astronomical objects such as neutron stars. A detailed knowledge of nucleon-nucleon (NN) potentials exists in literature, however very little is known about interactions between anti-nucleons. Similarly lack of scattering data for hyperon-nucleon (YN) systems makes it difficult to construct YN potentials. In heavy-ion collisions, a large number of baryons are produced in each nucleus-nucleus collision, which allows us to study the NN and YN interactions. Measurements of two-particle correlation function are used to study the space-time dynamics of the source created in heavy-ion collisions. At low relative momentum, the two-particle correlations are effected by the Final State Interactions (FSI), making it possible to measure FSI between nucleon and multi-strange baryon Ξ . The first measurement of proton- Ξ correlation function from the STAR experiment at RHIC for the Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV will be presented.

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