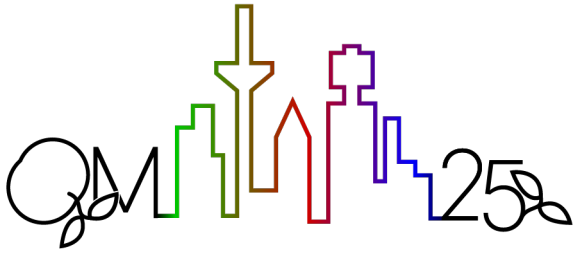

Contribution ID: **669** Type: **Poster**

Measurements of Λ-Λ Correlation Function in Au+Au Collisions at $\sqrt{s_{NN}}$ = 3 GeV

Femtoscopy is a powerful technique for probing both the emission source and the interaction potential between particle pairs. The key observable in femtoscopy is the two-particle correlation function, which provides crucial insights into the space-time dynamics of the emitting source as well as final-state interaction effects. Among the less explored interactions is the hyperon-hyperon (YY) interaction, which remains poorly understood both theoretically and experimentally. Understanding the YY interaction is vital not only for advancing our knowledge of the equation of state in neutron star interiors but also for the search for exotic hadrons, which could offer deeper insights into the strong force and nuclear matter under extreme conditions.

In this poster, the first measurements of Λ-Λ correlation function in Au+Au collisions at $\sqrt{s_{NN}}$ = 3 GeV with the fixed-target mode from STAR Beam Energy Scan II will be presented. Using the Lednicky-Lyuboshitz model, the physics parameters including source size, scattering length and effective range will be extracted. The results will be compared with the data from higher energies along with model calculations generated via the UrQMD hadronic transport model and HALQCD potentials.

Category

Experiment

Collaboration (if applicable)

The STAR Collaboration

Author: MI, ke

Presenter: MI, ke

Session Classification: Poster session 2

Track Classification: Collective dynamics & small systems