



Contribution ID: 485

Type: Poster

Strangeness production in Au+Au collisions at $\sqrt{s_{NN}} = 14.6$ GeV using AMPT and UrQMD model

Tuesday 5 September 2023 17:30 (2h 10m)

The production of strange quarks and antiquarks in high-energy collisions of heavy ions is a significant indicator for the creation of a state of matter known as Quark-Gluon Plasma (QGP). The QGP is characterized by the liberation of quarks and gluons from their confinement inside hadrons. Due to their prompt decay via weak interactions, strange quarks and antiquarks are not present in normal matter and can only be produced via strong interactions within the QGP. As the mass of strange quarks and antiquarks is close to the temperature at which protons, neutrons, and other hadrons dissolve into quarks, they serve as sensitive probes for studying the conditions, structure, and evolution of the deconfined state of matter.

The current work will compare the properties of different strange particles, including Λ , Ξ , and Ω in heavy-ion collisions at varying centralities, using two models for simulating these collisions: the AMPT and UrQMD models, by comparing the yield and the baryon-to-antibaryon ratio of these particles at different centralities at $\sqrt{s_{NN}} = 14.6$ GeV from the two models, we can better understand the properties of the QGP medium and gain insight into the differences and similarities between the two simulation models. The better understanding, we can better understand the properties of the QGP medium and gain insight into the differences and similarities between the two simulation models. The ultimate goal of this analysis is to provide a more comprehensive understanding of the production of strange particles in heavy-ion collisions and its implications for the formation and properties of the QGP medium.

Category

Experiment

Collaboration (if applicable)

Primary author: Ms BHAGAT, Pratibha (University of Jammu)

Co-author: Prof. BHASIN, Anju (University of Jammu)

Presenter: Ms BHAGAT, Pratibha (University of Jammu)

Session Classification: Poster Session

Track Classification: QCD at finite density and temperature