



Contribution ID: 187

Type: **Talk**

Recent strangeness results from the RHIC beam energy scan

Thursday, 10 September 2020 11:00 (25 minutes)

The main motivation of the RHIC beam energy scan (BES) program is to study the quantum chromodynamics (QCD) phase diagram. Systematic analysis of Au+Au collisions from $\sqrt{s_{NN}} = 39$ GeV down to 7.7 GeV in the RHIC BES-I could help to achieve the following goals: 1) to find the QCD critical point where the first order phase transition at finite baryon chemical potential ends and to identify the phase boundary of the first order phase transition; 2) to locate the collision energy where deconfinement begins.

Strange hadrons are an excellent probe for identifying the phase boundary and onset of deconfinement. In particular, the strange quark production rate and its subsequent evolution in the hot and dense nuclear medium depend on the collision energy and the net baryon density. We will review recent STAR measurements of K_S , K^\pm , $\bar{\Lambda}$, Λ , Ξ , and Ω at mid-rapidity from the RHIC BES-I. We will discuss the strangeness enhancement through the ratios $K/\bar{\Lambda}$, $\Lambda/\bar{\Lambda}$, $\bar{\Lambda}/\bar{\Lambda}$ and $\Xi/\bar{\Lambda}$, and strangeness equilibration as a function of collision energy. Nuclear modification factors and baryon to meson ratios will be discussed to understand the hadron production mechanisms. Implications on partonic vs. hadronic dynamics at the RHIC BES-I energy range will be discussed. The prospects for the RHIC BES-II, starting from last year, will also be discussed.

Is this abstract from experiment?

No

Internet talk

Yes

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

N/A

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Session Classification: Workshop on Physics at FAIR-NICA-SPS-BES/RHIC