

Particle production in heavy-ion collisions at RHIC

Tuesday 12 December 2017 11:35 (15 minutes)

The beam-energy scan at RHIC aims to discover whether a critical point exists in the phase diagram of QCD. We will report on the most comprehensive measurement of single-particle spectra for a multitude of hadrons from the first run, taken with the STAR experiment. From these measurements we will infer the kinetic and chemical freeze-out temperatures and the baryon chemical potential as functions of beam energy and centrality. The freeze-out dynamics of the system formed in heavy-ion collisions will be discussed in detail. The results provide an opportunity for the beam-energy scan program at RHIC to enlarge the (T, μ_B) region of the phase diagram to search for the QCD critical point.

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Session Classification: WG6: Interactions with Nuclei