

Strange baryons production in Au+Au collisions at $\sqrt{s_{NN}} = 19.6$ GeV from STAR

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Abstract

At very high temperatures and nearly zero baryon densities, experiments are concentrated on the study of the properties of the deconfined QCD matter. At moderate temperatures and high baryon densities, investigations are focused on the search for structures in the QCD phase diagram such as the critical end point, the predicted first order phase transition between hadronic and partonic matter and the chiral phase transition. Strangeness production has been suggested as a sensitive probe to the early dynamics of the deconfined matter created in heavy-ion collisions. The data taken during 2010 and 2011 in Beam Energy Scan (BES) phase-I indicated potential changes in the medium properties for $\sqrt{s_{NN}} \leq 19.6$ GeV. However, no definite conclusions can be drawn due to the limited precision of those data. Since 2018, STAR has conducted the BES phase-II program and accumulated high statistics Au+Au collision data at various energies ($\sqrt{s_{NN}}$) below 27 GeV. The production of Λ from Au+Au collisions at $\sqrt{s_{NN}} = 19.6$ GeV will be presented in this talk. The P_T spectra, nuclear modification factors, and particle ratios will also be reported.