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Identified light and strange hadron spectra at $\sqrt{s_{NN}}=14.5\text{ GeV}$ and systematic study of baryon/meson effect at intermediate transverse momentum with STAR at RHIC BES I

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With the recently measured Au+Au collisions at $\sqrt{s_{NN}}=14.5\text{ GeV}$, STAR completed its first phase of the Beam Energy Scan (BES) program at RHIC. The main motivation of the BES program is the study of the QCD phase diagram and the search for a conjectured critical point. Amongst the various collision energies of 7.7, 11.5, 19.6, 27, and 39 GeV, that have been previously presented by STAR, collisions at 14.5 GeV will provide data set in the relatively large chemical potential gap between the 11.5 and 19.6 GeV center-of-mass energies. In this contribution, we report new STAR measurements of Au+Au at $\sqrt{s_{NN}}=14.5\text{ GeV}$ that involve identified light particle R_{CP} and spectra, as well as measurements of the strange hadrons (K_s^0 , Λ , Ξ , Ω and ϕ). The spectra from both light and strange particles cover a significant range of the intermediate transverse momentum ($2 < p_T < 5\text{ GeV}/c$) in all beam energies. This provides a unique set of data for a systematic study of the baryon-to-meson ratio at intermediate p_T from BES Phase I. We will discuss its physics implications and whether hadronic interactions at late stage dominate the collision dynamics.

On behalf of collaboration:

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