

Abstract Submitted
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Strange Hadron Production in Au+Au Collisions at $\sqrt{S_{NN}} = 54.4 GeV$ YAN HUANG, Tsinghua University — The RHIC Beam Energy Scan (BES) Program is proposed to study the Quantum Chromodynamics phase transition and to locate the onset of deconfinement. As a sensitive probe to the transition from the hadron gas to the Quark-Gluon Plasma, the particle ratios of strange hadrons are measured to study the properties of nuclear matter and extract the chemical freeze-out parameters¹². Recently, the production of strange hadrons ($K_S^0, \Lambda, \bar{\Lambda}, \Xi^-, \bar{\Xi}^+, \Omega^-, \bar{\Omega}^+$, and ϕ) at mid-rapidity ($-\eta \sim 0.5$) in Au+Au collisions at $\sqrt{S_{NN}} = 54.4 GeV$ are measured at the Relativistic Heavy Ion Collider STAR experiment. In this talk, transverse momentum spectra, nuclear modification factor R_{cp} , baryon-to-meson ratio, as well as the overall integrated yields of these strange hadrons at $54.4 GeV$ are presented. In particular, the multi-strange baryon-to-meson ratio $N(\Omega^- + \bar{\Omega}^+)/[2N(\phi)]$ at $54.4 GeV$ is studied and compared to previous measurement at other BES energies³. The strange-hadron-to-pion ratios versus charged hadron multiplicity are also studied.

¹**Phys.Rev.C**102,034909(2020)

²**Phys.Rev.C**96,044904(2017)

³**Phys.Rev.C**93,021903(R)(2016)

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