

Strange hadron and resonance production in Au+Au collisions at RHIC Beam Energy Scan

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Abstract

1 Strangeness production has been suggested as a sensitive probe to the early-time
2 dynamics of the nuclear matter created in heavy-ion collisions. Transverse momentum
3 distributions and yields of strange hadrons and resonances provide important information
4 about the particle production mechanisms and help us to understand the properties
5 of the created medium and its evolution in these collisions. RHIC Beam Energy Scan
6 (BES) program covers a wide range of energies from $\sqrt{s_{NN}} = 62.4 - 3$ GeV. Of partic-
7 ular interest is the high baryon density region which is accessible through the STAR
8 fixed-target (FXT) program, extending the energy reach down to 3 GeV

9 This poster will report on the measurements of strange hadrons and resonances
10 production using the data from Phase-I ($\sqrt{s_{NN}} = 7.7 - 54.4$ GeV) and new data from
11 Phase-II ($\sqrt{s_{NN}} = 27, 19.6, 14.6$ and 3 GeV) of the BES program in Au+Au collisions.
12 These results include the transverse mass spectra, rapidity density distributions, and
13 particle ratios of strange hadrons and resonances (K_S^0 , K^{*0} , Φ , Λ , Ξ , Ω). The collision
14 centrality dependence of the yields and particle ratios will be presented. In addition,
15 results will be compared with those from higher collision energies.