Title:

Higher-order diagonal cumulants of net-Lambda multiplicity distributions and off-diagonal cumulants of net-proton, net-kaon, and net-charge multiplicity distributions in the STAR experiment in Au+Au collisions at $\sqrt{s}_{NN}$ =27 GeV at STAR

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Susceptibilities of conserved quantities, such as net-charge, net-baryon, and net-strangeness, are sensitive to the quantum chromodynamics (QCD) phase transition, and also the QCD critical point. The prime aim of the RHIC beam-energy scan program is to explore the QCD phase diagram and search for the location of QCD critical , which can be studied by higher order cumulants of net-proton (Δp), netcharge (ΔQ), and net-kaon (Δk) multiplicity distributions. Additionally,the cumulants of net-Λ($\Delta\Lambda$) multiplicity distributions could provide an access to explore flavor-dependent chemical freeze-out parameters in the QCD phase diagram. In the year 2018, the STAR experiment has collected high statistics minimum bias data in Au+Au collisions at = 27 GeV. We present the higher-order diagonal cumulants (1st to 4th order) and their ratios of $\Delta\Lambda$ multiplicity distributions. A comparison between higher order cumulants of $\Delta\Lambda$ and Δk multiplicity distributions are discussed. Furthermore, the off-diagonal cumulants between Δp-Δk at this collision energy along with other published BES results will be discussed.