



Contribution ID: 528

Type: Poster

Energy Dependence of the Fluctuations of Net-Lambda Distributions at STAR

Tuesday, 15 May 2018 19:10 (30 minutes)

The measurement of conserved charge distributions have generated considerable interest in understanding the cumulants of conserved quantum numbers in the QCD phase diagram, in particular the behavior near a possible critical end point and hadronization near chemical freeze-out line. Net-protons have been used as a proxy for net-baryons. In this poster, we show a first measurement of the efficiency-corrected cumulant ratios (C_2/C_1 , C_3/C_2) of net- Λ , which are subject to strangeness and baryon number conservation, for five beam energies ($\sqrt{s_{NN}} = 19.6, 27, 39, 62.4$ and 200 GeV Au+Au collisions) as a function of centrality and rapidity. We compare our results to the previous STAR results [1, 2], the Poisson and negative binomial expectations, as well as the UrQMD model, the hadron resonance model, and lattice QCD predictions. We deduce chemical freeze-out parameters (μ_B , T) and discuss the deviations of the cumulant ratios from Poisson as possible signals for critical fluctuations.

References

- [1] L. Adamczyk et al. (STAR Collaboration), "Energy Dependence of Moments of Net-proton Multiplicity Distributions at RHIC", Phys. Rev. Lett.112, 032302 (2014), arXiv:1309.5681.
 [2] L. Adamczyk et al. (STAR Collaboration), "Collision Energy Dependence of Moments of Net-Kaon Multiplicity Distributions at RHIC", arxiv:1709.00773.

Content type

Experiment

Collaboration

STAR

Centralised submission by Collaboration

Presenter name already specified

Primary author: YE, Zhenyu (University of Illinois at Chicago)

Presenter: Mr KULATHUNGA, Nalinda (University of Houston)

Session Classification: Poster Session

Track Classification: Correlations and fluctuations