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Measurement of the Sixth-order Cumulant of Net-charge Distributions in Au+Au Collisions at $\sqrt{s_{NN}} = 200$ GeV by the STAR Experiment

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In heavy-ion collision experiments, the study of event-by-event fluctuations is a powerful tool to characterize the thermodynamic properties of the hot and dense QCD matter. According to the Lattice QCD calculations, an analytic cross-over exists at small μ_B regions but there is no experimental evidence for the location of predicted cross-over. Experimentally, it is thought that up to the sixth-order cumulant and the ratio to the variance may be the signal of the cross-over. The STAR experiment presented up to the fourth-order cumulant ratios of net-charge and up to the sixth-order of net-proton fluctuations at $\sqrt{s_{NN}} = 200$ GeV. However, the fifth and sixth-order cumulant of net-charge have not been presented yet. This poster presents measurements of cumulants from the first- to sixth-order and the ratio to the variance of net-charge using particle species and p_T dependent efficiency corrections for Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV during Beam Energy Scan in 2010 and 2011.

Content type

Experiment

Collaboration

STAR

Centralised submission by Collaboration

Presenter name already specified

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