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Higher moments of Net Kaon Fluctuation in the Beam Energy Scan of STAR

The Relativistic Heavy-Ion Collider (RHIC), at BNL, has started its beam energy scan program to locate the QCD critical point which is also one of the main aims of the STAR experiment.
Calculations on the lattice predict that the higher moments of the multiplicity distribution of the conserved quantities like the net-charge, net-baryon, net-strangeness are related to the corresponding susceptibilities and the correlation length of the system. These moments shows deviation from monotonic behavior at critical point. STAR experiment has already published the result for higher moments of the net-proton multiplicity distribution in Au+Au collisions at √sNN = 19.6, 62.4 and 200 GeV.

Here we report the first measurements of the standard deviation, skewness and kurtosis of the net kaon fluctuation measured by the STAR detector at mid-rapidity for Au+Au collisions at various energies. It will be compared with various theoretical models.

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