**Introduction**

The evolution of strongly interacting matter created at the FAIR-NICA energies characterized by high net baryon densities and moderate temperatures is expected to occur near the boundary of the first order phase transition and probable in vicinity of the critical QCD point. A large event-by-event fluctuations of hadronic observables are expected to be the signatures of this critical point. In this work we analyze event-by-event fluctuations of observables like charge multiplicity and particle K/π ratio. The initial state asymmetry and its effects is discussed based on centrality classes or <Npart> determined by Glauber model.

**Results - Net charge fluctuations**

Net charge fluctuations are evaluated using,

\[ \omega = \frac{(Q^+ - Q^-)}{(Q^+ + Q^-)} \text{ for } +, \text{ ch (total)} \]

\[ \nu_{K^+} = \frac{(N_{K^+}(N_{K^+}) - 1)}{(N_{K^+})} \]

\[ \nu_{\pi^+} = \frac{(N_{\pi^+}(N_{\pi^+}) - 1)}{(N_{\pi^+})} \]

Kaon vs Pion yield fluctuations are evaluated using

\[ \nu_{K^+} = \frac{(N_{K^+}(N_{K^+}) - 1)}{(N_{K^+})} \]

\[ \nu_{\pi^+} = \frac{(N_{\pi^+}(N_{\pi^+}) - 1)}{(N_{\pi^+})} \]

We use a sample of 500,000 minbias Au+Au events from Urqmd 3-4 in a fix target experiment at 2, 4, 6, 8, 10 GeV.

**Results - Kaon vs Pion Yield Fluctuations**

Distribution for 3.5% most central events Au+Au for different beam energies.

**Bibliography**