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Energy dependence of Cumulants of Net-Proton and Net-Baryon Multiplicity distributions in Au+Au collisions from JAM model

Summary

Higher moments of conserved quantities are proved to be sensitive observables to study the QCD phase structures and have been used to search for the QCD critical point in the STAR experiment. Results from the STAR experiment Beam Energy Scan Phase I show a non-monotonic energy dependence of net-proton 4th order cumulant and could be a signal of the critical region. So that Model calculation baseline are needed to understand the experiment result.

In this study we will show energy dependence of higher order cumulants of net-proton and net-baryon in Au+Au collisions at several BES-I energies within JAM model. Effects of hadronic re-scattering and weak decay on the cumulants will also be disscussed.

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