

Angular correlations of identified particles in the STAR BES data.

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The angular correlation function (CF) refers to the correlation of particles in the relative pseudorapidity and relative azimuthal angle. It is used to study strongly interacting matter properties at relativistic energies. Recent results from the ALICE experiment at LHC show unexpected structures of CF in the proton-proton and antiproton-antiproton correlations. Also results from the STAR experiment at RHIC on directed flow (dv_1/dy) for the net-baryons are intriguing. Both observations are suggesting that study of CF of identified particles can provide more detailed insight into nuclear matter properties, in comparison with measurements of unidentified particles.

The STAR capability of identifying particles at mid rapidity, paired with the data from broad energy range of Au+Au collisions in the Beam Energy Scan program, provide unique opportunity to investigate the phase diagram of strongly interacting matter through the CF analysis. In this talk recent STAR experimental results from the Au+Au collisions at $\sqrt{s_{NN}} = (7.7-200) \text{ GeV}$ from the RHIC's Beam Energy Scan will be presented.

List of tracks

Fluctuation in initial conditions, collective flow and correlations

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