

# Effects of enhanced bulk viscosity near the QCD critical point

*Wednesday, February 8, 2017 3:00 PM (20 minutes)*

Search for the conjectured QCD critical point is one of the major scientific goals for the Beam Energy Scan program at RHIC. The growth of the correlation length is a universal feature for systems near criticality, and observables which are most sensitive to the correlation length should be explored to identify signals of the QCD critical point.

Among all the first-order transport coefficients, bulk viscosity exhibits the strongest dependence on the correlation length. We investigate the effects of bulk viscosity near the QCD critical point on particle spectrum by solving relativistic viscous hydrodynamic equations at finite densities [1]. We find that rapidity distributions of charged particles and net baryon number are visibly modified if the fireball passes through the vicinity of the QCD critical point during its time evolution. We also discuss how critical modification of photon emission rate may leave imprints on thermal photon distributions.

[1] A. Monnai, S. Mukherjee, Y. Yin, arXiv:1606.00771[nucl-th]

## Preferred Track

Baryon-Rich QCD Matter and Astrophysics

## Collaboration

Not applicable

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