

Lattice QCD Constraints on the QCD Critical Point

Saturday, 2 June 2018 16:40 (30 minutes)

The physics of the transition from the hadronic to quark-gluon plasma phase is non-perturbative and lattice QCD provides a framework for *ab initio* calculations in this regime of QCD. It is expected that the QCD phase diagram in the temperature-baryon chemical potential plane contains a line of first-order phase transitions that ends at a critical point. *Ab initio* calculations at non-zero chemical potential are difficult due to the sign problem. However, significant progress has been made by using the Taylor expansion and imaginary chemical potential methods. Lattice calculations of the fluctuations and correlations of conserved charges and the higher-order cumulants, that I will review in this talk, allow one to access a region of non-zero chemical potential and put constraints on the possible location of the critical point.

E-mail

bazavov@msu.edu

Primary author: Dr BAZAVOV, Alexei (Michigan State University)

Presenter: Dr BAZAVOV, Alexei (Michigan State University)

Session Classification: Quark Matter and High Energy Heavy Ion Collisions

Track Classification: QMHI