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The QCD critical point hunt: new dynamic framework and first simulation results

Tuesday, 25 June 2019 11:00 (45 minutes)

The on-going heavy-ion collision experiments at RHIC is scanning the baryon-rich regime of the QCD phase diagram with an unprecedented precision that would potentially discover the QCD critical point, the landmark point in the phase diagram. On the theory front, conventional hydrodynamic modeling would not be sufficient for the critical point hunt. Instead, I will present a novel theoretical framework, namely “hydro+”, which couples critical fluctuations to bulk evolution of the “fireball” created in heavy-ion collisions. I will show the first results on the numerical simulations of “hydro+”, and, if time is permitted, discuss the interesting connection of “hydro+” to other approaches of fluctuating hydrodynamics.

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