

# Complex Langevin simulations for finite density QCD

*Thursday 28 July 2022 09:45 (45 minutes)*

Lattice simulations of non-zero density QCD introduce the so-called sign problem, which invalidates importance sampling methods. We use the Complex Langevin equation (CLE) to circumvent the sign problem. Recent results regarding the phase diagram and thermodynamics of QCD using Complex Langevin simulations will be reviewed. Theoretical developments about ‘boundary terms’ are also discussed: in some cases one observes the convergence of the CLE to incorrect results. A cheap observable is proposed which allows unambiguous detection of the correctness of the simulations. Preliminary results of measurements of these ‘boundary term’ observables in full QCD are presented.

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