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The QCD phase diagram at low baryon density from lattice simulations

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The QCD phase diagram as a function of temperature and chemical potential for baryon number is largely unknown. Straightforward Monte Carlo simulations of lattice QCD are prohibited by the so-called sign problem for systems with a non-vanishing net baryon number. After a brief introduction to the origin of the sign problem, I review some recent computational techniques valid for sufficiently small baryon chemical potentials, and summarize our current knowledge of the QCD phase diagram resulting from such simulations.

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