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Towards the heavy dense QCD phase diagram using Complex Langevin simulations

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Monte Carlo methods cannot probe far into the QCD phase diagram with a real chemical potential, due to the famous sign problem. Complex Langevin simulations, using adaptive step-size scaling and gauge cooling, are suited for sampling path integrals with complex weights. We report here tests on the deconfinement transition in pure Yang-Mills SU(3) simulations and present an update on the QCD phase diagram in the limit of heavy and dense quarks.

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