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On complex Langevin dynamics and zeroes of the determinant

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In the complex Langevin approach to lattice simulations at nonzero density, zeroes of the fermion determinant lead to a meromorphic drift and hence a need to revisit the theoretical justification. In this talk we discuss how poles in the drift affect the formal justification of the approach and then explore the various possibilities in simple models. The implications of the findings for heavy dense QCD and full QCD are discussed.

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