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Solving the complex action problem of the finite density Z3 spin model with the density of states approach using FFA

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In this contribution we apply a variant of the density of states method to the Z3 spin model with a chemical potential. We use a restricted Monte Carlo strategy to compute restricted expectation values and study their dependence on a free parameter λ which enters in the Boltzmann weight. When expressed in terms of the density, the expectation values are well known functions of λ which we fit to the Monte Carlo data and in this way determine the density of states (functional fit approach (FFA)). We calculate observables related to the particle number and the particle number susceptibility and compare the results to a reference simulation in the dual formulation of the Z3 spin model. We find a good agreement of the methods for a wide range of parameters.

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