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Reweighted complex Langevin approach to chiral fermion models at finite density

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We apply complex Langevin equation (CLE) to simulate the 0+1 dimensional Thirring model at finite density. In the crossover region the simulation fails because of the zero of the fermion determinant. To simulate the crossover region, we then apply the reweighting method with the ensembles generated with CLE at high enough chemical potential. We study the effectiveness of the reweighting method by changing the model parameters, the coupling constant, mass, lattice size, from the viewpoint of the Lefschetz thimble structure of the model. We also like to include results on chiral random matrix model at finite temperature and density, applying the same strategy.

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