

Abstract Submitted
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Construction of localized wave functions for a disordered optical lattice and analysis of the resulting Hubbard model parameters
SHENGQUAN ZHOU, DAVID CEPERLEY, University of Illinois at Urbana-Champaign — We propose a method to construct localized single particle wave functions using imaginary time projection and thereby determine lattice Hamiltonian parameters. We apply the method to a specific disordered potential generated by an optical lattice experiment and calculate for each instance of disorder, the equivalent lattice model parameters. The probability distributions of the Hubbard parameters are then determined. Tests of localization and energy convergence are examined.

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