

Abstract Submitted  
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**Characterizing the Bose Glass Phase in Disordered Optical Lattices** ERIC WELCH, ADAM CHALUPA, BYOUNGHAK LEE, Texas State Univ-San Marcos — We present a theoretical study of disordered optical lattices using a mean-field approach to the Bose-Hubbard model. Through analyses on simple disorder configurations, such as binary and ternary random disorder potentials, we find that the phase transition at each lattice site is directly between Mott insulator and superfluid, contrary to the spatially averaged phase, where the transition between Mott insulator and superfluid is through the Bose glass phase. We also discuss the instability of the Bose glass phase in uniformly disordered systems in the terms of spatially averaged pure systems with chemical potential offsets.

Eric Welch  
Texas State Univ-San Marcos

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