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Real space renormalization of the Mott-insulator to Bose-glass transition in the disordered Bose-Hubbard model ANTHONY HEGG, University of Illinois, Urbana-Champaign, FRANK KRUGER, University of St. Andrews, PHILIP PHILLIPS, University of Illinois, Urbana-Champaign — We show the explicit breakdown of self-averaging, due to rare region Griffiths physics, in the disordered Bose-Hubbard model . The real space renormalization flow of the disorder is toward a Gaussian distribution with vanishing relative variance in the Mott insulator, whereas the Bose glass distribution becomes distinctly non-Gaussian with diverging relative variance. We explore distributions which correspond to a non-trivial fixed point in the renormalization group equations.

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