

Abstract Submitted
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Dynamics of noise correlations of ultracold bosons in an optical lattice KHAN W. MAHMUD, EITE TIESINGA, Joint Quantum Institute, NIST and University of Maryland, USA — We study second order correlations of ultracold bosons in an optical lattice for superfluid and Mott insulating phases. Starting with a superfluid ground state, a sudden increase in the lattice depth projects it into a non-equilibrium state. We examine the subsequent dynamics of the system - analyzing noise correlations of the atomic cloud after time-of-flight expansion. We also investigate the effects of three and higher-body interactions on noise correlations in deep lattices.

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