

Abstract Submitted
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Damping of Bloch oscillations in the presence of localized impurities¹ JEREMY REEVES, MATTHIAS VOGT, BRYCE GADWAY, DANIEL PERTOT, DOMINIK SCHNEBLE, Stony Brook University — Ultracold atoms in optical lattices provide an ideal system for the study of Bloch oscillations (BOs). Recently, there has been interest in exploring the effects of disorder on the damping of BOs, e.g. by the use of bichromatic lattices or the addition of localized impurity atoms. Here, disorder and interactions may have competing effects on the damping rate. We investigate damped BOs in a quantum-degenerate two-component mixture of ^{87}Rb atoms in a state dependent optical lattice, in which the atoms from one component are localized while the other component undergoes BOs.

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