

Abstract Submitted
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Resonant Dynamics of Interacting Cold Atoms in a Constant Field CHESTER RUBBO, BRANDON PEDEN, ANA REY, MURRAY HOLLAND — We propose to study the dynamics of strongly interacting ultracold bosons loaded at commensurate and incommensurate fillings in an optical lattice driven by a constant force field. The field is tuned resonantly with the interaction parameters providing a reduced Hilbert space for analysis at sufficiently short times. In addition, we investigate a possible non-destructive detection scheme for the atomic motion by coupling the atoms to a small-intensity cavity field and show how the dynamics in our system is reflected in the probe field.

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