

Abstract Submitted  
for the DAMOP13 Meeting of  
The American Physical Society

**Dynamical extraction of lattice-localized atoms from a superfluid**

JEREMY REEVES, LUDWIG KRINNER, DOMINIK SCHNEBLE, Stony Brook University — Bosonic quantum-gas mixtures in optical lattices allow for a wide range of studies including disordered systems, dissipative phenomena and out-of-equilibrium effects. Using a rubidium condensate, we study the coherent transfer of atoms between a superfluid and the orbitals of a deep state-dependent optical lattice, achieved by driving the atoms between two hyperfine ground states. We observe a nontrivial dependence of the transfer efficiency on the coupling strength, linked to the mean-field dynamics of the superfluid.

Jeremy Reeves  
Stony Brook University

Date submitted: 25 Jan 2013

Electronic form version 1.4