6.11, Nonlinear dynamics and out-of-equilibrium trapped gases
for the DAMOP16 Meeting of
The American Physical Society

Lattice-Based Studies of Weakly Coupled Atom-Reservoir Systems[1] LUDWIG KRINNER, MICHAEL STEWART, ARTURO PAZMINO, DOMINIK SCHNEBLE, Dept. of Physics and Astronomy, Stony Brook University — The coupling of a small quantum system to a much larger one (serving as a reservoir) can give rise to both coherent and dissipative behavior. We report our progress on characterizing a system composed of atoms trapped in a state-dependent optical lattice subject to coupling to a variable bosonic background. This system is predicted to display both polaronic energy shifts and spin-boson-type dissipative dynamics, phenomena that can be studied in our system utilizing precise magnetic field control.

[1]Work supported by NSF grant No. PHY-1205894.

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Date submitted: 31 Jan 2016 Electronic form version 1.4