

Abstract Submitted
for the DAMOP08 Meeting of
The American Physical Society

Cavity QED of optical lattice clocks DOMINIC MEISER, BRANDON PEDEN, MURRAY HOLLAND, JILA and Department of Physics, CU Boulder — Optical lattice clocks are fast approaching a regime where experimental limitations will be fundamental rather than technical. One approach to addressing these issues is to generate the optical lattice in a cavity, where the experimenter can take advantage of information imprinted on the lattice fields. Here, we present a theoretical framework for studying optical lattice clocks in cavities. In both linear and ring geometries, we use this cavity QED formalism to investigate fundamental phenomena such as cavity-assisted cooling, Bloch oscillations, and spin-squeezing.

Brandon Peden
JILA and Department of Physics, CU Boulder

Date submitted: 01 Feb 2008

Electronic form version 1.4