

Abstract Submitted
for the DAMOP12 Meeting of
The American Physical Society

Seconds-scale Light Storage LIN LI, YAROSLAV DUDIN, ALEX KUZMICH, Georgia Institute of Technology — We report on achieving ultra-long lifetimes for coherent light storage. An optically thick sample of ^{87}Rb confined in a far-off-resonance optical lattice is used as the storage medium. Ground state differential Stark shift is compensated via “magic” magnetic field technique. The observed $1/e$ lifetime for storage and retrieval protocol employing the clock (0-0) transition is 5 s. After the storage protocol is augmented by a dynamic decoupling with a sequence of microwave pi-pulses, the $1/e$ lifetime for storage of coherent light is further increased, up to 16 s.

Lin Li
Georgia Institute of Technology

Date submitted: 16 Mar 2012

Electronic form version 1.4