

Abstract Submitted
for the DAMOP18 Meeting of
The American Physical Society

Bichromatic slower for inertial sensing using slow atoms¹ CHAO LI, XIAO CHAI, CHANDRA RAMAN, Georgia Institute of Technology — We present progress toward an atom interferometer (AI) inertial sensor utilizing a slow rubidium atomic beam. Bichromatic forces decelerate the atoms to tens of meters/second using two counterpropagating light fields. The use of stimulated forces provides a substantial reduction in the deceleration distance, and therefore, the overall system size, compared with traditional laser cooling using spontaneous forces (for example, Zeeman slowers). Slow atoms possess distinct advantages for portable sensors aimed at dynamic platforms, as their sensitivity can be comparable to MOT based atom interferometer experiments operated at high data rates, but without suffering from dead time associated with trap loading.

¹This work was supported by ONR Award No. N00014-17-1-2249.

Chao Li
Georgia Institute of Technology

Date submitted: 26 Jan 2018

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