

Abstract Submitted
for the DAMOP13 Meeting of
The American Physical Society

Frequency Tunable Atomic Magnetometer based on an Atom Interferometer¹ FRANK A. NARDUCCI, Naval Air Systems Command, DANIELLE A. BRAJE, MIT Lincoln Laboratory, JON P. DAVIS, Naval Air Systems Command, CHARLES L. ADLER, St. Mary's College of Maryland — We theoretically and experimentally study a magnetically sensitive atom interferometer. Using a stationary atom cloud, a time-domain interferometer is formed on magnetically sensitive states of ^{85}Rb . We show that the temporal spacing of a Raman pulse sequence controls the frequency of the magnetic field detected by the interferometer, thereby potentially eliminating unwanted noise and optimizing detection in frequency bands of interest. We focus on a standard $\pi/2-\pi-\pi/2$ sequence and explore the utility of multiple π pulses.

The Lincoln Laboratory portion of this work is sponsored by the Assistant Secretary of Defense for Research & Engineering under Air Force Contract #FA8721-05-C-0002. Opinions, interpretations, conclusions and recommendations are those of the authors and are not necessarily endorsed by the United States Government.

¹This work at NavAir was supported by the Office of Naval Research and by the NavAir Chief Technology Office

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Date submitted: 30 Jan 2013

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