Abstract Submitted
for the 4CF15 Meeting of
The American Physical Society

Design and Characterization of a Simple Integrator Feedback Control Lockbox DANIEL CRUNKELTON, SCOTT D. BERGESEN, JOHN ELLSWORTH, MERIDETH DAHL, CHRISTOPHER RUNNING, Brigham Young University — A report of the performance of a laser frequency lock box using only integral feedback gain. In a first design of this box, we used a regular printed circuit board (PCB). However, our DC-DC Voltage Converter produced spurious noise signals in the 10 kHz frequency range with an amplitude of 200 mV, making our lock boxes useless. The newly-designed lock box incorporates a copper ground plane and large capacitors. The noise in the circuit is now in the sub-mV range, allowing us to lock our lasers with minimal error.

Daniel Crunkelton
Brigham Young University

Date submitted: 09 Oct 2015 Electronic form version 1.4