

Abstract Submitted  
for the DAMOP14 Meeting of  
The American Physical Society

**Towards Laser Cooling Ions with Telecom Light**<sup>1</sup> STEVEN OLMSCHEK, BRAD BEDACHT, NICK THEISEN, Denison University — Trapped atomic ions are a proven system in precision measurements, atomic clocks, and quantum information. However, the requirement of ultraviolet or blue light for laser cooling typically results in complex and expensive systems, and may inhibit some applications. We present progress on our proposal to laser cool doubly-ionized lanthanum, requiring only infrared light. In addition to potentially reducing the infrastructure overhead for trapped ion experiments, lanthanum could allow direct interfacing between trapped atomic ions and telecom light, making the system amenable to long-distance quantum communication and distributed quantum computation.

<sup>1</sup>This research is supported by the Army Research Office and Denison University.

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Date submitted: 31 Jan 2014

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