

Abstract Submitted  
for the DAMOP11 Meeting of  
The American Physical Society

**Ultracold Atoms and Cavity Quantum Electrodynamics: Building a Resource for Quantum Information** KYLE ARNOLD, MARKUS BADEN, MURRAY BARRETT, Centre for Quantum Technologies/National University of Singapore — We report our progress towards an atom-photon node using cavity QED. Our system utilizes a far detuned optical lattice to transport cold atoms into a high finesse cavity, anywhere from a single atom to several thousand. We will present our ongoing investigations with this system. In particular we have studied effect of varying coupling on the cavity spectrum with multiple hyperfine levels.

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Date submitted: 11 Mar 2011

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