

Abstract Submitted
for the DAMOP11 Meeting of
The American Physical Society

Atoms and photonic crystal cavities MICHAL BAJCSY, Stanford University, ANDREI FARAON, HP Labs, Palo Alto, CA, KELLEY RIVOIRE, ARKA MAJUMDAR, JELENA VUCKOVIC, Stanford University — Atoms coupled to micro- or nano-scale optical resonators create a system interesting both for fundamental studies and practical applications. In particular, photonic crystal cavities fabricated in thin semiconductor membranes have extremely small optical mode volumes and are well suited for integration with optical waveguides and on-chip electronics. Here, we study how deposition of cesium atoms affects the properties of a photonic crystal cavity fabricated in gallium phosphide. Additionally, we introduce a proposal for a single photon switching scheme based on cesium atoms coupled to a photonic crystal cavity with a moderate Q-factor.

Michal Bajcsy
Stanford University

Date submitted: 04 Feb 2011

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