

Abstract Submitted
for the DAMOP06 Meeting of
The American Physical Society

Fluorescence spectrum of spontaneous emission in cavity.¹

MATTHEW TERRACIANO, REBECCA OLSON, LUIS OROZCO, Physics UMD, College Park, MD, PERRY RICE, Miami U., Oxford OH — We study the probe spectrum of light generated by spontaneous emission into the mode of a cavity QED system. We identify the spontaneous emission process by the polarization of the transmitted light when the excitation of the atoms is with linear polarization in a $\Delta m = 0$ transition in the D_2 line of ^{85}Rb . The probe spectrum has a maximum on-resonance when the number of inverted atoms for an input drive is maximal. For a larger number of atoms N , the maximum splits and develops into a doublet, but its frequencies are different from those of the so-called vacuum Rabi splitting.

¹Work supported by NSF and NIST

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Date submitted: 23 Jan 2006

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