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Author	Jacobs, Andrew, 1985–
Title	<i>Probe Spectra and Photon Statistics in a Weakly-Driven Cavity Optomechanical System</i>
Degree	Master of Science, Miami University, Physics, 2012.
Abstract	Work to date in cavity optomechanics has focused primarily on the coupling between the cavity field and the mechanical oscillator. We investigate a weakly driven, damped optomechanical cavity containing a two-level atom with an oscillating end mirror or an intracavity dielectric membrane. We carry out numerical simulations of the system using the framework of quantum trajectories, implemented with the Quantum Toolbox in Python (QuTiP). We calculate the cavity probe spectrum and various second-order correlations, finding they are modified by the coupling between the cavity field and the mechanical oscillator.
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Subjects	Physics; Quantum Physics
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