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Cavity Field Suppression via Interference Effects

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The purpose of the study is to show how interference effects are responsible for manipulating the output electromagnetic field of a microresonator in the good-cavity limit. The system of interest consists of a moderately strongly pumped two-level emitter embedded in a photonic crystal microcavity. This is due to the interference among the scattered light by a strongly pumped atom into the cavity mode and an incident cavity weaker laser field. The phase difference of the applied lasers can be a convenient tool to control the photon dynamics. The photon statistics shows super- or sub-Poissonian statistics.