Dynamics of the Two-mode Jaynes-Cummings Model Modified by Stark Shifts

Gou, Shih-Chuan

Abstract

The effective Hamiltonian of the two-mode Jaynes-Cummings model including the Stark shifts is derived. With an arbitrary initial condition, the general time dependent solution is presented. We find that in most circumstances the Stark shifts cannot be ignored, yet for certain correlated two-mode field states the elimination of Stark shifts is possible.