

Internal Webinar

Multi-mode Jaynes–Cummings model results for the collapse and the revival of the quantum Rabi oscillations in a lossy resonant cavity

Najirul Islam

UoH, Hyderabad

We have numerically obtained theoretical results for the collapse and the revival of the quantum Rabi oscillations for low average number of coherent photons injected on a two-level system in a lossy resonant cavity. We have adopted the multimode Jaynes–Cummings model for the same and especially treated the “Ohmic” loss to the walls of the cavity, the leakage from the cavity, and the loss due to the spontaneous emission through the open surface of the cavity. We have compared our results with the experimental data obtained by Brune et al. [Phys.Rev. Lett. 76 (1996) 1800] in this regard.

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