

Abstract Submitted
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Effects of counter rotating terms on quantum discord and entanglement between two atoms in a dissipative cavity FERDI ALTINTAS, RESUL ERYIGIT, Abant Izzet Baysal University — We have investigated the role of counter-rotating interaction terms in the Rabi Hamiltonian on the creation and dynamics of entanglement and quantum discord between two identical atoms interacting with a lossy single mode cavity field for a system initially in different product states. For some initial states, the counter-rotating terms are found to lead to steady states in the long time limit which can have high quantum discord, but have no entanglement. The effect of cavity decay rate on these steady states quantum discord has been also investigated, surprisingly the increase in cavity decay rate is found to enhance the steady state quantum discord. Moreover, for certain initial states the effect of counter rotating terms are found to be detrimental to the quantum correlations when counter rotating terms in interaction Hamiltonian are taken into account.

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