

Abstract Submitted
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Mutual Preservation of Entanglement ANDRZEJ VEITIA, University of Columbia — We study a generalized double Jaynes-Cummings (JC) model where two entangled pairs of two-level atoms interact indirectly. We focus on the case where the cavities and the entangled pairs are uncorrelated. We show that there exist initial states of the qubit system so that two entangled pairs are available at all times. In particular, the minimum entanglement in the pairs as a function of the initial state is studied. Finally, we extend our findings to a model consisting of multi-mode atom-cavity interactions. We use a non-Markovian quantum state diffusion (QSD) equation to obtain the steady-state density matrix for the qubits. We show that the multi-mode model also displays dynamical preservation of entanglement.

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