

Abstract Submitted
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Adiabatic Transfer of Light in a Double Cavity¹ NICHOLAS CHISHOLM, Harvard University, NICHOLAS MILADINOVIC, FAIYAZ HASAN, IAN LINNINGTON, McMaster University, ED HINDS, Imperial College, DUNCAN O'DELL, McMaster University — We perform a simple theoretical analysis of the problem of two optical cavities coupled by a common mirror which is movable. The mirror position controls the electromagnetic mode structure of the double cavity. Modes can be transferred from one side to the other by moving the mirror, thereby allowing deterministic and on-demand transfer of photons between two cavities. By mapping the Maxwell wave equation onto the Schrodinger wave equation, we are able to make use of the Landau-Zener result for the transition probability at an avoided crossing to obtain the conditions for adiabatic transfer.

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