Adiabatic Transfer of Light in a Double Cavity[1] NICHOLAS
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CAN O'DELL, McMaster University — We perform a simple theoretical analysis
of the problem of two optical cavities coupled by a common mirror which is mov-
able. 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 cav-
ities. 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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