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Fidelity of quantum teleportation based on temporally resolved photodetection of collective spontaneous emission[1] RICHARD WAGNER, JAMES CLEMENS, Miami University — We employ quantum trajectory theory to model temporally resolved photodetection of collective emission from a pair of atoms to investigate the performance of a conditional quantum teleportation protocol. One atom is entangled with another qubit in a Bell state and the other is in an arbitrary state. We find that the fidelity, minimized over the state to be teleported, exceeds the classical limit of 2/3 provided that the combined photon collection and detection efficiency exceeds 3/4.

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