

A Feasible Scheme for Teleportation of Multi-atom Cat-like States in Thermal Cavities

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Abstract: An experimentally feasible scheme for implementing teleportation of multi-atom cat-like states in cavity QED is proposed. In the scheme the atoms interact simultaneously with a highly detuned cavity mode and are driven by a strong classical field, and the atomic state evolution is independent of cavity field state. Thus the scheme is insensitive to both the cavity decay and the thermal field, which is of importance from the experimental point of view. All the orthogonal and complete multi-atom GHZ states can be exactly distinguished only by one step, so our scheme can also be used for other purposes such as dense coding using multi-atom GHZ states as quantum channels.

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Key words: teleportation, multi-atom cat-like state, multi-atom GHZ, multi-atom GHZ discrimination

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