Efficient Scheme for the Generation of Atomic Schrödinger Cat States in an Optical Cavity

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Abstract: An efficient scheme is proposed for the generation of atomic Schrödinger cat states in an optical cavity. In the scheme N three-level atoms are loaded in the optical cavity. Raman coupling of two ground states is achieved via a laser field and the cavity mode. The cavity mode is always in the vacuum state and the atoms have no probability of being populated in the excited state. Thus, the scheme is insensitive to both the cavity decay and spontaneous emission.

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