

Preparation of Multi-Atom Entangled States with a Single Cavity in a Thermal State

ZHENG Shi-Biao

Department of Electronic Science and Applied Physics, Fuzhou University, Fuzhou 350002, China
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Abstract: A scheme is suggested for the generation of multi-atom maximally entangled states with a cavity in a thermal state. In this scheme several appropriately prepared two-level atoms are simultaneously sent through the nonresonant cavity. We divide the whole atom-cavity interaction time into two equal parts. At the end of the first part a π pulse is applied to the atoms using a classical field. Then the photon-number-dependent shifts on the atomic states are cancelled and the atomic system finally evolves to a maximally entangled state.

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Key words: multi-atom entangled state, thermal state, nonresonant state

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