

Conditional Synthesis of Entangled Coherent States with Continuous External Pumping in a Dispersive Cavity QED

GUO Jian-Hong

Department of Physics, Liaoning Normal University, Dalian 116029, China
Theoretical Physics Division, Nankai Institute of Mathematics, Nankai University, Tianjin 300071, China

Liu Hui Center for Applied Mathematics, Nankai University and Tianjin University, Tianjin 300071, China

(Received: 2003-4-23; Revised: 2003-6-4)

Abstract: The interaction of two-level atoms with both a two-mode cavity field and an external classical pumping field, and with the fields being degenerate in frequency, is studied in the regime where the atoms and fields are highly detuned. This dispersive interaction can be used to generate a large number of important entangled coherent states conditional on the initial atomic states and state-selective measurements. A dynamical relation is established between the results for the case with continuous pumping and the case without external driving where the coherent field is put in as the initial condition.

PACS: 03.67.-a, 32.80.-t, 42.50.Dv

Key words: entangled coherent states, cavity quantum electrodynamics

[\[Full text: PDF\]](#)

Close