2007 Vol.47 No.1 pp.139-142 DOI:

# On Common Eigenvector of Parametric Interaction Hamiltonian and Number-Difference Operator Derived by Virtue of Entangled State Representation

FAN Hong-Yi[1] and GAO Wei-Bo[2]

[1] Department of Material Science and Engineering, University of Science and Technology of China, Hefei 230026, China
[2] Department of Modern Physics, University of Science and Technology of China, Hefei 230026, China
(Received: 2005-9-19; Revised: )

Abstract: By virtue of the properties of bipartite entangled state representation we derive the common eigenvector of the parametric Hamiltonian and the two-mode number-difference operator. This eigenvector is superposition of some definite two-mode Fock states with the coefficients being proportional to hypergeometric functions. The Gauss contiguous relation of hypergeometric functions is used to confirm the formal solution.

PACS: 42.50.Dv
Key words: bipartite entangled state representation, number-difference operator, hypergeometric functions

[Full text: PDF]

Close