PHYSICAL REVIEW A

For editorial and subscription correspondence,
please see inside front cover
(ISSN: 1050-2947)

PERIODICALS
Postmaster send address changes to:
APS Subscription Services
Suite 1NO1
2 Huntington Quadrangle
Melville, NY 11747-4502

THIRD SERIES, VOLUME 77, NUMBER 5 PARTS A AND B — *CONTENTS* — **MAY 2008**

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 050101(R)-052902, and Part B pages 053201-059905(E).

PART A

RAPID COMMUNICATIONS

Fundamental concepts

Decays in quantum hierarchical models *(4 pages)* . . . . . 050101(R)
Ariel Amir, Yuval Oreg, and Yoseph Imry

Wave-packet Rabi oscillations from phase-space flow in mesoscopic cavity QED *(4 pages)* . . . . . 050102(R)
Omri Gat

Quantum information

Simple and secure quantum key distribution with biphotons *(4 pages)* . . . . . 050301(R)
I. Bregman, D. Aharonov, M. Ben-Or, and H. S. Eisenberg

Distribution of continuous-variable entanglement by separable Gaussian states *(4 pages)* . . . . . 050302(R)
Ladislav Mišta, Jr. and Natalia Korolkova

Geometric phase gate on an optical transition for ion trap quantum computation *(4 pages)* . . . . . 050303(R)
K. Kim, C. F. Roos, L. Aolita, H. Häffner, V. Nebendahl, and R. Blatt

Tunneling phase gate for neutral atoms in a double-well lattice *(4 pages)* . . . . . 050304(R)
Frederick W. Strauch, Mark Edwards, Eite Tiesinga, Carl Williams, and Charles W. Clark

Character of locally inequivalent classes of states and entropy of entanglement *(4 pages)* . . . . . 050305(R)
Indrani Chattopadhyay and Debasis Sarkar

Memory effects in spin-chain channels for information transmission *(4 pages)* . . . . . 050306(R)
Abolfazl Bayat, Daniel Burgarth, Stefano Mancini, and Sougato Bose

Emergence of atom-light-mirror entanglement inside an optical cavity *(4 pages)* . . . . . 050307(R)
C. Genes, D. Vitali, and P. Tombesi

Multilevel multiparty singlets as ground states and their role in entanglement distribution *(4 pages)* . . . . . 050308(R)
Christopher Hadley and Sougato Bose

Copyright 2008 by The American Physical Society

(Continued)

1050-2947(200805)77:5:A;1-3