PHYSICAL REVIEW A

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

PERIODICALS
Postmaster send address changes to:
American Institute of Physics
Suite 1NO1
2 Huntington Quadrangle
Melville, NY 11747-4502

THIRD SERIES, VOLUME 68, NUMBER 3 *CONTENTS* **SEPTEMBER 2003**

RAPID COMMUNICATIONS

Atomic and molecular structure and dynamics

Clock transition for a future optical frequency standard with trapped atoms *(4 pages)* . . . . . 030501(R)
Irène Courtillot, Audrey Quessada, Richard P. Kovacich, Anders Brusch, Dmitri Kolker, Jean-Jacques Zondy, Giovanni D. Rovera, and Pierre Lemonde

Quantal and classical radiative cascade in Rydberg plasmas *(4 pages)* . . . . . 030502(R)
M. R. Flannery and D. Vrinceanu

Atomic and molecular collisions and interactions

Threshold ionization laws for electron-hydrogen scattering and their dominant region of configuration space *(4 pages)* . . . . . 030701(R)
Philip L. Bartlett, Andris T. Stelbovics, and Igor Bray

Electron-impact ionization of atomic hydrogen at incident electron energies of 15.6, 17.6, 25, and 40 eV *(4 pages)* . . . . . 030702(R)
J. G. Childers, K. E. James, M. Hughes, Igor Bray, M. Baertschy, and M. A. Khakoo

Atomic and molecular processes in external fields

Electron emission during combined attosecond pulses *(4 pages)* . . . . . 031401(R)
J. P. Hansen, T. Sørevik, and L. B. Madsen

Light-induced trapping of molecular wave packets in the continuum *(4 pages)* . . . . . 031402(R)
Bo Y. Chang, Herschel Rabitz, and Ignacio R. Sola

Observation of the Hopf bifurcation in parametrically driven trapped atoms *(4 pages)* . . . . . 031403(R)
Kihwan Kim, Heung-Ryoul Noh, Young-Hee Yeon, and Wonho Jhe

Unexpected instabilities in the dynamic Kingdon trap *(4 pages)* . . . . . 031404(R)
I. Garrick-Bethell and R. Blümel

Matter waves

Shrinking of a condensed fermionic cloud in a trap approaching the Bose-Einstein condensation limit *(4 pages)* . . . . . 031601(R)
A. Perali, P. Pieri, and G. C. Strinati

Correlation functions and momentum distribution of one-dimensional Bose systems *(4 pages)* . . . . . 031602(R)
G. E. Astrakharchik and S. Giorgini

Role of quantum statistics in the photoassociation of Bose-Einstein condensates *(4 pages)* . . . . . 031603(R)
M. K. Olsen and L. I. Plimak

Copyright 2003 by The American Physical Society

(Continued)

1050-2947(200309)68:3;1-H

PHYSICAL REVIEW A THIRD SERIES, VOLUME 68, NUMBER 3 SEPTEMBER 2003

Ferromagnetic phase transition and Bose-Einstein condensation in spinor Bose gases *(4 pages)* . . . . . 031604(R)
Qiang Gu and Richard A. Klemm
Excitation spectrum of vortex lattices in rotating Bose-Einstein condensates *(4 pages)* . . . . . 031605(R)
S. Choi, L. O. Baksmaty, S. J. Woo, and N. P. Bigelow

ARTICLES

Fundamental concepts

Tunneling dynamics in relativistic and nonrelativistic wave equations *(9 pages)* 032101
F. Delgado, J. G. Muga, A. Ruschhaupt, G. García-Calderón, and J. Villavicencio
Violation of local realism by a system with N spin-$\frac{1}{2}$ particles *(3 pages)* 032102
Xiao-Hua Wu and Hong-Shi Zong
Violation of local uncertainty relations as a signature of entanglement *(6 pages)* 032103
Holger F. Hofmann and Shigeki Takeuchi
Decoherence from a chaotic environment: An upside-down ''oscillator'' as a model *(14 pages)* 032104
Robin Blume-Kohout and Wojciech H. Zurek
Quantum jumps and entropy production *(7 pages)* 032105
Heinz-Peter Breuer

Quantum information

Realistic simulations of single-spin nondemolition measurement by magnetic resonance force microscopy *(14 pages)* 032301
Todd A. Brun and Hsi-Sheng Goan
Nonadditive generalization of the quantum Kullback-Leibler divergence for measuring the degree of purification *(3 pages)* 032302
Sumiyoshi Abe
Global-fidelity limits of state-dependent cloning of mixed states *(6 pages)* 032303
Alexey E. Rastegin
Use of quadrupolar nuclei for quantum-information processing by nuclear magnetic resonance: Implementation of a quantum algorithm *(8 pages)* 032304
Ranabir Das and Anil Kumar
Experimental demonstration of an entanglement swapping operation and improved control in NMR quantum-information processing *(7 pages)* 032305
N. Boulant, K. Edmonds, J. Yang, M. A. Pravia, and D. G. Cory
Direct estimation of functionals of density operators by local operations and classical communication *(4 pages)* 032306
Carolina Moura Alves, Paweł Horodecki, Daniel K. L. Oi, L. C. Kwek, and Artur K. Ekert
State permutations from manipulation of near-level-crossings *(6 pages)* 032307
Nicole F. Bell, R. F. Sawyer, Raymond R. Volkas, and Yvonne Y. Y. Wong
Generalizations of entanglement based on coherent states and convex sets *(21 pages)* 032308
Howard Barnum, Emanuel Knill, Gerardo Ortiz, and Lorenza Viola
Unified criterion for security of secret sharing in terms of violation of Bell inequalities *(7 pages)* 032309
Aditi Sen(De), Ujjwal Sen, and Marek Żukowski
Measurement-induced nonlinearity in linear optics *(13 pages)* 032310
Stefan Scheel, Kae Nemoto, William J. Munro, and Peter L. Knight
Verification procedures for quantum noiseless subsystems *(5 pages)* 032311
Lorenza Viola and Emanuel Knill

(Continued)

PHYSICAL REVIEW A THIRD SERIES, VOLUME 68, NUMBER 3 SEPTEMBER 2003

Relation between classical communication capacity and entanglement capability for two-qubit unitary operations *(12 pages)* 032312
Dominic W. Berry and Barry C. Sanders
Cloning a real *d*-dimensional quantum state on the edge of the no-signaling condition *(6 pages)* 032313
Patrick Navez and Nicolas J. Cerf
Quantum walks based on an interferometric analogy *(10 pages)* 032314
Mark Hillery, Janos Bergou, and Edgar Feldman
Cyclic networks of quantum gates *(14 pages)* 032315
Peter Cabauy and Paul Benioff
Experimental controlled-NOT logic gate for single photons in the coincidence basis *(4 pages)* 032316
T. B. Pittman, M. J. Fitch, B. C Jacobs, and J. D. Franson
Strong superadditivity of the entanglement of formation follows from its additivity *(5 pages)* 032317
A. A. Pomeransky
Entanglement and correlation in anisotropic quantum spin systems *(8 pages)* 032318
Ulrich Glaser, Helmut Büttner, and Holger Fehske

Atomic and molecular structure and dynamics

Relative likelihood of encountering conical intersections and avoided intersections on the potential energy surfaces of polyatomic molecules *(2 pages)* 032501
Donald G. Truhlar and C. Alden Mead
Decay rates of excited muonic molecular ions *(6 pages)* 032502
E. Lindroth, J. Wallenius, and S. Jonsell
Energy levels and lifetimes of Nd IV, Pm IV, Sm IV, and Eu IV *(4 pages)* 032503
V. A. Dzuba, U. I. Safronova, and W. R. Johnson
Isotope shift of the thallium $(6s6p^2)\ ^4P_{1/2}$ state *(4 pages)* 032504
R. H. Wynar, M. Iinuma, W. Nagourney, and E. N. Fortson
Soft-x-ray Kossel structures from W/C multilayers under various electron ionization conditions *(7 pages)* . . . 032505
P. Jonnard, J.-M. André, C. Bonnelle, F. Bridou, and B. Pardo
Origin of Au $L\beta_2$ visible satellites *(6 pages)* 032506
H. Oohashi, T. Tochio, Y. Ito, and A. M. Vlaicu
Exchange-correlation potentials in the adiabatic connection fluctuation-dissipation framework *(13 pages)* 032507
Y. M. Niquet, M. Fuchs, and X. Gonze
Optical pumping of metastable NH radicals into the paramagnetic ground state *(7 pages)* 032508
Sebastiaan Y. T. van de Meerakker, Boris G. Sartakov, Allard P. Mosk, Rienk T. Jongma, and Gerard Meijer[1,3,4]
Trapped planar three-boson system with spin 1 and with hard-core interactions *(9 pages)* 032509
C. G. Bao and T. Y. Shi
Multichannel quantum defect theory and high-resolution spectroscopy of the hyperfine structure of high Rydberg states of ^{83}Kr *(16 pages)* 032510
H. J. Wörner, U. Hollenstein, and F. Merkt
Calculation of binding energy for muonic three-body systems in the hyperspherical approach *(6 pages)* 032511
M. R. Eskandari and M. Mahdavi
Two-loop corrections to the decay rate of parapositronium *(11 pages)* 032512
Gregory S. Adkins, Nathan M. McGovern, Richard N. Fell, and J. Sapirstein

Atomic and molecular collisions and interactions

Cross section and asymmetry parameter calculations for the C 1*s* photoionization of CH_4, CF_4, and CCl_4 *(7 pages)* 032701
Alexandra P. P. Natalense, Luiz M. Brescansin, and Robert R. Lucchese

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 68, NUMBER 3** **SEPTEMBER 2003**

Pseudopotential model of ultracold atomic collisions in quasi-one- and two-dimensional traps *(8 pages)* 032702
E. L. Bolda, E. Tiesinga, and P. S. Julienne
Collision-sequence interference in collision-induced spectra at low densities *(9 pages)* 032703
John Courtenay Lewis and Roger M. Herman
Vibrational relaxation and dissociative recombination of H_2^+ induced by slow electrons *(8 pages)* 032704
V. Ngassam, O. Motapon, A. Florescu, L. Pichl, I. F. Schneider, and A. Suzor-Weiner
Relating the $4s\sigma^{-1}$ inner-valence photoelectron spectrum of HBr with the Br $3d^{-1}5l\lambda$ resonant Auger spectra: An approach to the assignments *(11 pages)* 032705
R. Püttner, Y. F. Hu, G. M. Bancroft, A. Kivimäki, M. Jurvansuu, H. Aksela, and S. Aksela
Fragmentation of positronium in collision with He atoms: A classical theoretical approach *(8 pages)* 032706
L. Sarkadi
Comparative study of electron and positron scattering from benzene (C_6H_6) and hexafluorobenzene (C_6F_6) molecules *(8 pages)* 032707
C. Makochekanwa, O. Sueoka, and M. Kimura
Total electron scattering cross sections of PH_3 and SiH_4 molecules in the energy range 90–3500 eV *(5 pages)* 032708
W. M. Ariyasinghe, T. Wijerathna, and D. Powers
Three-body momentum exchange in singly ionizing 2-MeV/u C^{6+}-helium collisions *(7 pages)* 032709
D. Fischer, A. B. Voitkiv, R. Moshammer, and J. Ullrich
Magnetic circular dichroism in the ion yield of polarized chromium atoms at the $2p$ edge *(6 pages)* 032710
G. Prümper, S. Kröger, R. Müller, M. Martins, J. Viefhaus, P. Zimmermann, and U. Becker
$2e^-$ transfer and excitation formalism in ion-atom collisions at high energies *(6 pages)* 032711
A. Zerarka, V. G. Foester, and J. Hans
Electron-impact ionization of all ionization stages of beryllium *(9 pages)* 032712
J. Colgan, S. D. Loch, M. S. Pindzola, C. P. Ballance, and D. C. Griffin
High-resolution study of the $K\beta_2$ x-ray spectra of mid-Z atoms bombarded with 20-MeV/amu ^{12}C ions *(14 pages)* 032713
J. Rzadkiewicz, D. Chmielewska, Z. Sujkowski, J.-Cl. Dousse, D. Castella, D. Corminboeuf, J. Hoszowska, P.-A. Raboud, M. Polasik, K. Słabkowska, and M. Pajek
Collective coordinates and an accompanying metric force in structural isomerization dynamics of molecules *(16 pages)* 032714
Tomohiro Yanao and Kazuo Takatsuka
Electron collisions with tetrafluoroethylene (C_2F_4) and ethylene (C_2H_4) molecules *(5 pages)* 032715
Czesław Szmytkowski, Stanisław Kwitnewski, and Elżbieta Ptasińska-Denga
Vibrational deactivation of $F_2(\nu=1, j=0)$ by ^{3}He at very low energy: A comparative study with the He-N_2 collision *(9 pages)* 032716
T. Stoecklin, A. Voronin, and J. C. Rayez
Suppression of the spontaneous emission of atoms and molecules *(9 pages)* 032717
Einat Frishman and Moshe Shapiro
Cold collisions of ground-state calcium atoms in a laser field: A theoretical study *(14 pages)* 032718
Béatrice Bussery-Honvault, Jean-Michel Launay, and Robert Moszynski
Electron-impact excitation cross sections of the higher argon $3p^5np$ $(n=5,6,7)$ levels *(11 pages)* 032719
Tobin Weber, John B. Boffard, and Chun C. Lin
Application of the hyperspherical hidden-crossing method to positronium formation in positron-lithium collisions *(8 pages)* 032720
S. J. Ward and J. Shertzer
Electron capture by Ne^{2+} ions from atomic hydrogen *(6 pages)* 032721
T. Mroczkowski, D. W. Savin, R. Rejoub, P. S. Krstić, and C. C. Havener
Pressure shift and broadening of the 254-nm intercombination line of mercury by N_2 *(6 pages)* 032722
James P. Jacobs and R. Bruce Warrington

(Continued)

PHYSICAL REVIEW A THIRD SERIES, VOLUME 68, NUMBER 3 SEPTEMBER 2003

Jump phenomenon induced by potential strength variation and the influence of exotic resonant states *(12 pages)* 032723
Cornelia Grama, N. Grama, and I. Zamfirescu

Photon, electron, atom, and molecule interactions with solids and surfaces

Laser vaporized Li_2, Na_2, K_2, and LiNa molecules observed by cavity ring-down spectroscopy *(8 pages)* . . . 032901
I. Labazan and S. Milošević
Potential-energy surfaces for charge exchange between singly charged ions and a LiF surface *(13 pages)* 032902
Ludger Wirtz, Joachim Burgdörfer, Michal Dallos, Thomas Müller, and Hans Lischka
Computer-simulation calculations of the electronic stopping of fast heavy charges by a classical harmonic oscillator *(7 pages)* 032903
M. M. Jakas, F. J. Pérez de la Rosa, and E. R. Custidiano

Clusters (including fullerenes)

Dynamical ionization ignition of clusters in intense short laser pulses *(10 pages)* 033201
D. Bauer and A. Macchi

Atomic and molecular processes in external fields

Analysis of resonance structure in the above-threshold ionization photoelectron spectra of magnesium *(9 pages)* 033401
G. D. Gillen and L. D. Van Woerkom
Parity-violating contributions to nuclear magnetic shielding *(4 pages)* 033402
Alessandro Soncini, Francesco Faglioni, and Paolo Lazzeretti
Roles of resonances and recollisions in strong-field atomic phenomena. II. High-order harmonic generation *(8 pages)* 033403
Richard Taïeb, Valérie Véniard, Joseph Wassaf, and Alfred Maquet
Extreme nonlinear optics of two-level systems *(8 pages)* 033404
T. Tritschler, O. D. Mücke, and M. Wegener
Reduced model for the description of radiation-matter interaction including atomic recoil *(13 pages)* 033405
J. Javaloyes, G. L. Lippi, and A. Politi
Weakly bound atomic trimers in ultracold traps *(5 pages)* 033406
M. T. Yamashita, T. Frederico, Lauro Tomio, and A. Delfino
Adiabatic passage and dissociation controlled by interference of two laser-induced continuum structures *(9 pages)* 033407
A. K. Popov, V. V. Kimberg, and Thomas F. George
Model study on the photoassociation of a pair of trapped atoms into an ultralong-range molecule *(10 pages)* 033408
B. Deb and L. You
Effect of tunneling on ionization of Rydberg states in intense fields: Hydrogenic atoms *(9 pages)* 033409
James S. Cohen
Combined effect of electric field and spin-orbit interaction on doubly excited Feshbach resonance states of helium below the $N=2$ threshold *(9 pages)* 033410
I. A. Ivanov and Y. K. Ho
Frequency-domain interpretation of the plateaus in laser-assisted recombination and high-order harmonic generation *(6 pages)* 033411
Taiwang Cheng, Xiaofeng Li, Shuyan Ao, Ling-An Wu, and Panming Fu

(Continued)

PHYSICAL REVIEW A THIRD SERIES, VOLUME 68, NUMBER 3 SEPTEMBER 2003

Observed photodetachment in parallel electric and magnetic fields *(8 pages)* 033412
John N. Yukich, Tobias Kramer, and Christian Bracher

Matter waves

Analytical expression for the first-order density matrix of a *d*-dimensional harmonically confined Fermi gas at finite temperature *(10 pages)* 033601
Brandon P. van Zyl
Natural orbitals and Bose-Einstein condensates in traps: A diffusion Monte Carlo analysis *(12 pages)* 033602
J. L. DuBois and H. R. Glyde
Neutron-multiwave-interference experiments with many resonance coils *(9 pages)* 033603
S. V. Grigoriev, Yu. O. Chetverikov, A. V. Syromyatnikov, W. H. Kraan, and M. Th. Rekveldt
Theory of a compound large-angle atom beam splitter *(7 pages)* 033604
A. Zh. Muradyan, A. A. Poghosyan, and P. R. Berman
Collective excitations in trapped boson-fermion mixtures: From demixing to collapse *(12 pages)* 033605
P. Capuzzi, A. Minguzzi, and M. P. Tosi
Quantum corrections to dilute Bose liquids *(5 pages)* 033606
Paulo F. Bedaque, Aurel Bulgac, and Gautam Rupak
Localization in splitting of matter waves *(12 pages)* 033607
Markku Jääskeläinen and Stig Stenholm
Properties of a dilute Bose gas near a Feshbach resonance *(5 pages)* 033608
Lan Yin and Zhen-Hua Ning
Evolution of the macroscopically entangled states in optical lattices *(13 pages)* 033609
Anatoli Polkovnikov
Hartree-Fock-Bogoliubov theory versus local-density approximation for superfluid trapped fermionic atoms *(10 pages)* 033610
Marcella Grasso and Michael Urban
Instabilities of off-centered vortices in a Bose-Einstein condensate *(7 pages)* 033611
Tomoya Isoshima, Jukka Huhtamäki, and Martti M. Salomaa
Pair dynamics in the formation of molecules in a Bose-Einstein condensate *(13 pages)* 033612
Pascal Naidon and Françoise Masnou-Seeuws
Finite-temperature excitations of a trapped Bose-Fermi mixture *(9 pages)* 033613
Xia-Ji Liu and Hui Hu

Quantum optics, physics of lasers, nonlinear optics

Superfluorescence polarization: Signature of collisional redistribution *(10 pages)* 033801
A. Kumarakrishnan, S. Chudasama, and X. L. Han
Optical application and measurement of torque on microparticles of isotropic nonabsorbing material *(8 pages)* 033802
Alexis I. Bishop, Timo A. Nieminen, Norman R. Heckenberg, and Halina Rubinsztein-Dunlop
Biphoton double-slit experiment *(6 pages)* 033803
G. Brida, E. Cagliero, G. Falzetta, M. Genovese, M. Gramegna, and E. Predazzi
Interplay between Coulomb interaction and quantum interference in three-level resonant asymmetric double quantum wells *(11 pages)* 033804
P. M. Alsing, D. H. Huang, D. A. Cardimona, and T. Apostolova
Description and analysis of low-frequency fluctuations in vertical-cavity surface-emitting lasers with isotropic optical feedback by a distant reflector *(16 pages)* 033805
A. V. Naumenko, N. A. Loiko, M. Sondermann, and T. Ackemann

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 68, NUMBER 3** **SEPTEMBER 2003**

Phase-matching analysis of high-order harmonics generated by truncated Bessel beams in the sub-10-fs regime *(14 pages)* 033806
C. Altucci, R. Bruzzese, C. de Lisio, M. Nisoli, E. Priori, S. Stagira, M. Pascolini, L. Poletto, P. Villoresi, V. Tosa, and K. Midorikawa

Energy fluctuations induced by stochastic frequency changes in atom traps *(8 pages)* 033807
I. Gallardo and R. Jáuregui

Complete conversion of sum-frequency generation enhanced by controllable linear gratings induced by an electro-optic effect in a periodic optical superlattice *(7 pages)* 033808
Fei Xu, Jun Liao, Xi-Jing Zhang, Jing-Liang He, Hui-Tian Wang, and N. B. Ming

Non-Markovian decay of a three-level cascade atom in a structured reservoir *(13 pages)* 033809
B. J. Dalton and B. M. Garraway

Three-dimensional Casimir force between absorbing multilayer dielectrics *(19 pages)* 033810
Christian Raabe, Ludwig Knöll, and Dirk-Gunnar Welsch

TE-TM dynamics in a semiconductor laser subject to polarization-rotated optical feedback *(8 pages)* 033811
T. Heil, A. Uchida, P. Davis, and T. Aida

Three-dimensional light distribution near the focus of a tightly focused beam of few-cycle optical pulses *(5 pages)* 033812
Kristine Marie Romallosa, Johnrob Bantang, and Caesar Saloma

Methods of asymptotic analysis in cavity quantum electrodynamics *(9 pages)* 033813
Claudia Eberlein and Shin-Tza Wu

Spatial quantum correlations in the fluorescence of traveling-wave second-harmonic generation *(15 pages)* 033814
Pierre Scotto

Theoretical study of the stretched-pulse erbium-doped fiber laser *(7 pages)* 033815
M. Salhi, H. Leblond, and F. Sanchez

Measurement of correlated multiple light scattering in ultracold atomic ^{85}Rb *(10 pages)* 033816
P. Kulatunga, C. I. Sukenik, S. Balik, M. D. Havey, D. V. Kupriyanov, and I. M. Sokolov

Entangled-state preparation via dissipation-assisted adiabatic passages *(11 pages)* 033817
Carsten Marr, Almut Beige, and Gerhard Rempe

Anticipated chaos in a nonsymmetric coupled external-cavity-laser system *(7 pages)* 033818
Paul Rees, Paul S. Spencer, Iestyn Pierce, S. Sivaprakasam, and K. Alan Shore

Observation of high-contrast coherence fringes in high-order harmonic generation *(7 pages)* 033819
S. Kazamias, D. Douillet, C. Valentin, F. Weihe, F. Augé, Th. Lefrou, G. Grillon, S. Sebban, and Ph. Balcou

Cavity-QED-based quantum phase gate *(6 pages)* 033820
M. Suhail Zubairy, Moochan Kim, and Marlan O. Scully

Relations between bosonic quadrature squeezing and atomic spin squeezing *(8 pages)* 033821
Xiaoguang Wang and Barry C. Sanders

Two-frequency emission and polarization dynamics at lasing threshold in vertical-cavity surface-emitting lasers *(11 pages)* 033822
M. Sondermann, M. Weinkath, T. Ackemann, J. Mulet, and S. Balle

Optomechanical characterization of acoustic modes in a mirror *(8 pages)* 033823
T. Briant, P.-F. Cohadon, A. Heidmann, and M. Pinard

(Continued)

PHYSICAL REVIEW A THIRD SERIES, VOLUME 68, NUMBER 3 SEPTEMBER 2003

BRIEF REPORTS

Fundamental concepts

Test of quantum action for the inverse square potential *(4 pages)* 034101
D. Huard, H. Kröger, G. Melkonyan, K. J. M. Moriarty, and L. P. Nadeau
Uncertainty reconciles complementarity with joint measurability *(4 pages)* 034102
P. Busch and C. R. Shilladay

Quantum information

Entanglement between a qubit and the environment in the spin-boson model *(4 pages)* 034301
T. A. Costi and Ross H. McKenzie
Estimating the postmeasurement state *(4 pages)* 034302
Jürgen Audretsch, Lajos Diósi, and Thomas Konrad
Quantum-information processing using Josephson junctions coupled through cavities *(4 pages)* 034303
Shi-Liang Zhu, Z. D. Wang, and Kaiyu Yang
Proper magnetic fields for nonadiabatic geometric quantum gates in NMR *(3 pages)* 034304
Kazuto Oshima and Koji Azuma
Quantum gates with topological phases *(4 pages)* 034305
Radu Ionicioiu
Generation of arbitrary superpositions of the Dicke states of excitons in optically driven quantum dots *(4 pages)* 034306
XuBo Zou, K. Pahlke, and W. Mathis
Bound entangled states violate a nonsymmetric local uncertainty relation *(4 pages)* 034307
Holger F. Hofmann
Kraus representation of destruction of states for one qudit *(2 pages)* 034308
Paweł Caban, Kordian A. Smoliński, and Zbigniew Walczak
Experimental eavesdropping attack against Ekert's protocol based on Wigner's inequality *(4 pages)* 034309
F. A. Bovino, A. M. Colla, G. Castagnoli, S. Castelletto, I. P. Degiovanni, and M. L. Rastello

Atomic and molecular structure and dynamics

Singular nonadiabatic coupling at intersections of potential-energy surfaces by infinite-order perturbation theory *(4 pages)* 034501
Florian Dufey

Clusters (including fullerenes)

van der Waals coefficients for positronium-atom interactions *(3 pages)* 035201
J. Mitroy and M. W. J. Bromley

Matter waves

Free expansion of lowest-Landau-level states of trapped atoms: A wave-function microscope *(4 pages)* 035601
N. Read and N. R. Cooper
Stability of dark solitons in a Bose-Einstein condensate trapped in an optical lattice *(4 pages)* 035602
P. G. Kevrekidis, R. Carretero-González, G. Theocharis, D. J. Frantzeskakis, and B. A. Malomed
Hydrodynamic flow of expanding Bose-Einstein condensates *(4 pages)* 035603
V. A. Brazhnyi, A. M. Kamchatnov, and V. V. Konotop

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 68, NUMBER 3** **SEPTEMBER 2003**

Two characteristic temperatures for a Bose-Einstein condensate of a finite number of particles *(4 pages)* 035604
Z. Idziaszek and K. Rzążewski

Quantum optics, physics of lasers, nonlinear optics

Generation of entangled states for many multilevel atoms in a thermal cavity and ions in thermal motion *(4 pages)* 035801
Shi-Biao Zheng

Backaction-induced spin-squeezed states in a detuned quantum-nondemolition measurement *(4 pages)* 035802
Jing Zhang, Kunchi Peng, and Samuel L. Braunstein

Cumulative Author Index i