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 76, NUMBER 2 PARTS A AND B — ***CONTENTS*** — **AUGUST 2007**

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 020701(R)-022714, and Part B pages 023401-029906(E).

PART A

RAPID COMMUNICATIONS

Atomic and molecular collisions and interactions

^{40}K-^{87}Rb Feshbach resonances: Modeling the interatomic potential *(4 pages)* . . . . . 020701(R)
C. Klempt, T. Henninger, O. Topic, J. Will, W. Ertmer, E. Tiemann, and J. Arlt

Clusters (including fullerenes)

Superfluidity of isotopically doped parahydrogen clusters *(4 pages)* . . . . . 021201(R)
Fabio Mezzacapo and Massimo Boninsegni

Atomic and molecular processes in external fields

Interference effects in photodetachment of F^- in a strong circularly polarized laser pulse *(4 pages)* . . . . . 021401(R)
S. Bivona, G. Bonanno, R. Burlon, and C. Leone

Matter waves

Supershell structures and pairing in ultracold trapped Fermi gases *(4 pages)* . . . . . 021601(R)
Magnus Ögren and Henning Heiselberg

Flow equations for the BCS-BEC crossover *(4 pages)* . . . . . 021602(R)
S. Diehl, H. Gies, J. M. Pawlowski, and C. Wetterich

Unitary Fermi gas in a harmonic trap *(4 pages)* . . . . . 021603(R)
S. Y. Chang and G. F. Bertsch

Pairing-based cooling of Fermi gases *(4 pages)* . . . . . 021604(R)
M. J. Leskinen, J. Kinnunen, and P. Törmä

Reversal of the circulation of a vortex by quantum tunneling in trapped Bose systems *(4 pages)* . . . . . 021605(R)
Gentaro Watanabe and C. J. Pethick

Quantum optics, physics of lasers, nonlinear optics, classical optics

Carrier-envelope phase-stabilized attosecond pulses from asymmetric molecules *(4 pages)* . . . . . 021801(R)
Pengfei Lan, Peixiang Lu, Wei Cao, Yuhua Li, and Xinlin Wang

Copyright 2007 by The American Physical Society

1050-2947(20070800)76:2:A;1-1

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Self-steepening of ultrashort optical pulses without self-phase-modulation *(4 pages)* . . . . . 021802(R)
Jeffrey Moses, Boris A. Malomed, and Frank W. Wise

Causal versus noncausal description of nonlinear wave mixing: Resolving the damping-sign controversy *(3 pages)* . . . . . 021803(R)
Shaul Mukamel

ARTICLES

Fundamental concepts

Path distinguishability in double scattering of light by atoms *(4 pages)* 022101
Christian Miniatura, Cord A. Müller, Yin Lu, Guangquan Wang, and Berthold-Georg Englert

Entanglement increase from local interactions and not completely positive maps *(6 pages)* 022102
Thomas F. Jordan, Anil Shaji, and E. C. G. Sudarshan

Relativistic corrections to the isotope shift in light ions *(7 pages)* 022103
V. A. Korol and M. G. Kozlov

Quasiclassical coarse graining and thermodynamic entropy *(16 pages)* 022104
Murray Gell-Mann and James B. Hartle

Analysis of singular operators in the relativistic calculation of magnetic molecular properties *(13 pages)* 022105
Daniel Zaccari, Martín C. Ruiz de Azúa, and Claudia G. Giribet

Electrodynamics of a compound system with relativistic corrections *(6 pages)* 022106
Krzysztof Pachucki

Coherent states of the Kratzer-Fues oscillator *(6 pages)* 022107
Marcin Molski

Euclidean resonance in a magnetic field *(8 pages)* 022108
B. Ivlev

Maximum entanglement in squeezed boson and fermion states *(5 pages)* 022109
F. C. Khanna, J. M. C. Malbouisson, A. E. Santana, and E. S. Santos

Quantum information

Continuous-variable quantum teleportation with non-Gaussian resources *(11 pages)* 022301
F. Dell'Anno, S. De Siena, L. Albano, and F. Illuminati

Effects of imperfect noise correlations on decoherence-free subsystems: SU(2) diffusion model *(10 pages)* . . . 022302
Rafał Demkowicz-Dobrzański, Piotr Kolenderski, and Konrad Banaszek

Maximum stabilizer dimension for nonproduct states *(5 pages)* 022303
Scott N. Walck and David W. Lyons

Measurement-based quantum computation with the toric code states *(10 pages)* 022304
Sergey Bravyi and Robert Raussendorf

Selective cloning of Gaussian states by linear optics *(6 pages)* 022305
Stefano Olivares

Robust quantum searching with spontaneously decaying qubits *(6 pages)* 022306
Robert J. C. Spreeuw and Tom W. Hijmans

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Dynamical suppression of decoherence by phase kicks: Master equation approach *(8 pages)* 022307
Masashi Ban, Sachiko Kitajima, and Fumiaki Shibata

Experimental remote preparation of arbitrary photon polarization states *(5 pages)* 022308
Wei-Tao Liu, Wei Wu, Bao-Quan Ou, Ping-Xing Chen, Cheng-Zu Li, and Jian-Min Yuan

Fock-space inseparability criteria of bipartite continuous-variable quantum states *(4 pages)* 022309
Xiao-yu Chen

Description of thermal entanglement with the static path plus random-phase approximation *(9 pages)* 022310
N. Canosa, J. M. Matera, and R. Rossignoli

Entanglement in fermionic systems *(13 pages)* 022311
Mari-Carmen Bañuls, J. Ignacio Cirac, and Michael M. Wolf

Non-Markovian entanglement dynamics of quantum continuous variable systems in thermal environments *(12 pages)* 022312
Kuan-Liang Liu and Hsi-Sheng Goan

Security of coherent-state quantum cryptography in the presence of Gaussian noise *(11 pages)* 022313
Matthias Heid and Norbert Lütkenhaus

Separability, entanglement, and full families of commuting normal matrices *(11 pages)* 022314
Jan Samsonowicz, Marek Kuś, and Maciej Lewenstein

Coexistence of unlimited bipartite and genuine multipartite entanglement: Promiscuous quantum correlations arising from discrete to continuous-variable systems *(9 pages)* 022315
Gerardo Adesso, Marie Ericsson, and Fabrizio Illuminati

Symmetries and noise in quantum walk *(15 pages)* 022316
C. M. Chandrashekar, R. Srikanth, and Subhashish Banerjee

Variable-frequency-controlled coupling in charge qubit circuits: Effects of microwave field on qubit-state readout *(6 pages)* 022317
Xiao-Ling He, Yu-xi Liu, J. Q. You, and Franco Nori

Continuous quantum error correction for non-Markovian decoherence *(12 pages)* 022318
Ognyan Oreshkov and Todd A. Brun

Witnessing macroscopic entanglement in a staggered magnetic field *(5 pages)* 022319
Jenny Hide, Wonmin Son, Ian Lawrie, and Vlatko Vedral

Bounds on negativity of superpositions *(5 pages)* 022320
Yong-Cheng Ou and Heng Fan

Role of interference in quantum state transfer through spin chains *(7 pages)* 022321
A. O. Lyakhov, D. Braun, and C. Bruder

Mixed entangled states with two or more common stabilizers *(5 pages)* 022322
Li-Yi Hsu

Optimal broadcasting of mixed states *(7 pages)* 022323
Gui-Fang Dang and Heng Fan

Measurable entanglement for tripartite quantum pure states of qubits *(4 pages)* 022324
Chang-shui Yu and He-shan Song

Upper bound on our knowledge about noncommuting observables for a qubit system *(5 pages)* 022325
Yuji Kurotani, Takahiro Sagawa, and Masahito Ueda

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Unambiguous identification of coherent states: Searching a quantum database *(12 pages)* 022326
Michal Sedlák, Mário Ziman, Ondřej Přibyla, Vladimír Bužek, and Mark Hillery

Energy protection arguments fail in the interaction picture *(4 pages)* 022327
Kenneth R. Brown

Formation of multipartite entanglement using random quantum gates *(7 pages)* 022328
Yonatan Most, Yishai Shimoni, and Ofer Biham

Fault-tolerant quantum repeater with atomic ensembles and linear optics *(12 pages)* 022329
Zeng-Bing Chen, Bo Zhao, Yu-Ao Chen, Jörg Schmiedmayer, and Jian-Wei Pan

Multiqubit entanglement witness *(11 pages)* 022330
Lin Chen and Yi-Xin Chen

Macroscopic quantum jumps and entangled-state preparation *(13 pages)* 022331
Jeremy Metz and Almut Beige

Tight bound on the coherent-state quantum key distribution with heterodyne detection *(8 pages)* 022332
Jérôme Lodewyck and Philippe Grangier

Quantum optical random walk: Quantization rules and quantum simulation of asymptotics *(10 pages)* 022333
Demosthenes Ellinas and Ioannis Smyrnakis

Conditional dynamics induced by new configurations for Rydberg dipole-dipole interactions *(5 pages)* 022334
E. Brion, A. S. Mouritzen, and K. Mølmer

Simplified approach to implementing controlled-unitary operations in a two-qubit system *(11 pages)* 022335
P. Kumar and S. R. Skinner

Multipartite quantum correlation and entanglement in four-qubit pure states *(7 pages)* 022336
Yan-Kui Bai, Dong Yang, and Z. D. Wang

Atomic and molecular structure and dynamics

Relativistic all-order calculations of In I and Sn II atomic properties *(10 pages)* 022501
U. I. Safronova, M. S. Safronova, and M. G. Kozlov

$6S_{1/2}$-$6P_{1/2}$ transition of Cs atoms in cubic and hexagonal solid ^{4}He *(9 pages)* 022502
A. Hofer, P. Moroshkin, S. Ulzega, D. Nettels, R. Müller-Siebert, and A. Weis

Supercritical Dirac resonance parameters from extrapolated analytic continuation methods *(7 pages)* 022503
Edward Ackad and Marko Horbatsch

Enhancement of the formation of ultracold $^{85}Rb_2$ molecules due to resonant coupling *(6 pages)* 022504
H. K. Pechkis, D. Wang, Y. Huang, E. E. Eyler, P. L. Gould, W. C. Stwalley, and C. P. Koch

Oxygen *K*-edge x-ray-emission–threshold-electron coincidence spectrum of CO_2 *(4 pages)* 022505
Johan Söderström, Marcus Agåker, Robert Richter, Michele Alagia, Stefano Stranges, and Jan-Erik Rubensson

Self-interaction-corrected time-dependent density-functional-theory calculations of x-ray-absorption spectra *(7 pages)* 022506
Guangde Tu, Zilvinas Rinkevicius, Olav Vahtras, Hans Ågren, Ulf Ekström, Patrick Norman, and Vincenzo Carravetta

Spectral properties of a Rydberg atom immersed in a Bose-Einstein condensate *(11 pages)* 022507
S. Middelkamp, I. Lesanovsky, and P. Schmelcher

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Nuclear vector polarizability correction to hyperfine splitting *(8 pages)* 022508
Krzysztof Pachucki

Probing the potential energy surface by high-resolution x-ray absorption spectroscopy: The umbrella motion of the core-excited CH_3 free radical *(5 pages)* 022509
M. Alagia, M. Lavollée, R. Richter, U. Ekström, V. Carravetta, D. Stranges, B. Brunetti, and S. Stranges

Nuclear spin effects in optical lattice clocks *(14 pages)* 022510
Martin M. Boyd, Tanya Zelevinsky, Andrew D. Ludlow, Sebastian Blatt, Thomas Zanon-Willette, Seth M. Foreman, and Jun Ye

Coupling of the $X\,^1\Sigma^+$ and $a\,^3\Sigma^+$ states of KRb *(10 pages)* 022511
A. Pashov, O. Docenko, M. Tamanis, R. Ferber, H. Knöckel, and E. Tiemann

Improved calculations of the lowest vibrational transitions in HeH^+ *(7 pages)* 022512
Sergiy Bubin, Monika Stanke, Dariusz Kędziera, and Ludwik Adamowicz

Experimental study of weak intersystem lines and related strong persistent lines of Ne II *(6 pages)* 022513
J. M. Bridges and W. L. Wiese

Atomic and molecular collisions and interactions

Ab initio investigation of electron capture by Cl^{7+} ions from H *(8 pages)* 022701
L. B. Zhao, A. Watanabe, P. C. Stancil, and M. Kimura

Excitation-energy dependence of the resonant Auger transitions to the $4p^4(^1D)np$ $(n=5,6)$ states across the $3d_{3/2}^{-1}5p$ and $3d_{5/2}^{-1}6p$ resonances in Kr *(8 pages)* 022702
A. Sankari, S. Alitalo, S. Fritzsche, J. Nikkinen, A. Kivimäki, S. Aksela, and H. Aksela

Resonance-excitation process for Ni-like tantalum *(12 pages)* 022703
T. M. Shen, C. Y. Chen, Y. S. Wang, Y. M. Zou, and M. F. Gu

Influence of a tight isotropic harmonic trap on photoassociation in ultracold homonuclear alkali-metal gases *(18 pages)* 022704
Sergey Grishkevich and Alejandro Saenz

Long-range dispersion interactions. I. Formalism for two heteronuclear atoms *(14 pages)* 022705
J.-Y. Zhang and J. Mitroy

Electron-impact ionization and recombination of *M*-shell atomic ions in the argon isonuclear sequence *(8 pages)* 022706
S. D. Loch, Sh. A. Abdel-Naby, C. P. Ballance, and M. S. Pindzola

Emission cross sections for electron impact on Cl_2 *(5 pages)* 022707
R. Scott Schappe and Kyle Wendt

Total cross sections for positron scattering from benzene, cyclohexane, and aniline *(6 pages)* 022708
Antonio Zecca, Norberto Moser, Chiara Perazzolli, Alessandro Salemi, and Michael J. Brunger

Electron loss from hydrogenlike, heliumlike, and lithiumlike uranium ions in collisions with atoms at low relativistic impact energies *(5 pages)* 022709
A. B. Voitkiv, B. Najjari, and J. Ullrich

Slow isocharged sequence ions with helium collisions: Projectile core dependence *(10 pages)* 022710
Deyang Yu, Xiaohong Cai, Rongchun Lu, Fangfang Ruan, Caojie Shao, Hongqiang Zhang, Ying Cui, Jun Lu, Xu Xu, Jianxiong Shao, Baowei Ding, Zhihu Yang, Ximeng Chen, and Zhaoyuan Liu

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Three-body recombination in one dimension *(15 pages)* 022711
N. P. Mehta, B. D. Esry, and Chris H. Greene

Guiding of slow Ne^{7+} ions through nanocapillaries in insulating polyethylene terephthalate: Incident current dependence *(10 pages)* 022712
N. Stolterfoht, R. Hellhammer, J. Bundesmann, D. Fink, Y. Kanai, M. Hoshino, T. Kambara, T. Ikeda, and Y. Yamazaki

Three-body kinematical correlation in the dissociative recombination of CH_2^+ by three-dimensional imaging *(9 pages)* 022713
I. Nevo, S. Novotny, H. Buhr, V. Andrianarijaona, S. Altevogt, O. Heber, J. Hoffmann, H. Kreckel, L. Lammich, M. Lestinsky, H. B. Pedersen, D. Schwalm, A. Wolf, and D. Zajfman

Excitation of the $6p7s\ ^3P_{0,1}$ states of Pb atoms by electron impact: Differential and integrated cross sections *(5 pages)* 022714
S. Milisavljević, M. S. Rabasović, D. Šević, V. Pejčev, D. M. Filipović, Lalita Sharma, Rajesh Srivastava, A. D. Stauffer, and B. P. Marinković

PART B

Atomic and molecular processes in external fields

Alignment effect in nonsequential double ionization of diatomic molecules in strong laser fields *(9 pages)* 023401
Y. Li, J. Chen, S. P. Yang, and J. Liu

Photoassociation of cold heteronuclear dimers in static electric fields *(9 pages)* 023402
Rosario González-Férez, Matthias Weidemüller, and Peter Schmelcher

HD^+ in a short strong laser pulse: Practical consideration of the observability of carrier-envelope phase effects *(12 pages)* 023403
V. Roudnev and B. D. Esry

Observation of single collisionally cooled trapped ions in a buffer gas *(5 pages)* 023404
M. Green, J. Wodin, R. DeVoe, P. Fierlinger, B. Flatt, G. Gratta, F. LePort, M. Montero Díez, R. Neilson, K. O'Sullivan, A. Pocar, S. Waldman, D. S. Leonard, A. Piepke, C. Hargrove, D. Sinclair, V. Strickland, W. Fairbank, Jr., K. Hall, B. Mong, M. Moe, J. Farine, D. Hallman, C. Virtue, E. Baussan, Y. Martin, D. Schenker, J.-L. Vuilleumier, J.-M. Vuilleumier, P. Weber, M. Breidenbach, R. Conley, C. Hall, J. Hodgson, D. Mackay, A. Odian, C. Y. Prescott, P. C. Rowson, K. Skarpaas, and K. Wamba

Stark deceleration and trapping of hydrogen Rydberg atoms *(6 pages)* 023405
E. Vliegen, S. D. Hogan, H. Schmutz, and F. Merkt

Accumulation and thermalization of cold atoms in a finite-depth magnetic trap *(8 pages)* 023406
R. Chicireanu, Q. Beaufils, A. Pouderous, B. Laburthe-Tolra, E. Maréchal, J. V. Porto, L. Vernac, J. C. Keller, and O. Gorceix

Sensitivity of double-resonance alignment magnetometers *(10 pages)* 023407
Gianni Di Domenico, Hervé Saudan, Georg Bison, Paul Knowles, and Antoine Weis

Multiobjective genetic approach for optimal control of photoinduced processes *(5 pages)* 023408
Luigi Bonacina, Jérôme Extermann, Ariana Rondi, Véronique Boutou, and Jean-Pierre Wolf

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Momentum distributions in time-dependent density-functional theory: Product-phase approximation for nonsequential double ionization in strong laser fields *(8 pages)* 023409
F. Wilken and D. Bauer

Effects of an optically induced non-Abelian gauge field in cold atoms *(6 pages)* 023410
Li-Hua Lu and You-Quan Li

Controlling rotational state distributions using two-pulse stimulated Raman excitation *(9 pages)* 023411
A. S. Meijer, Y. Zhang, D. H. Parker, W. J. van der Zande, A. Gijsbertsen, and M. J. J. Vrakking

Zeeman deceleration of H and D *(11 pages)* 023412
S. D. Hogan, D. Sprecher, M. Andrist, N. Vanhaecke, and F. Merkt

Blackbody thermometry with cold molecular ions and application to ion-based frequency standards *(6 pages)* 023413
J. C. J. Koelemeij, B. Roth, and S. Schiller

Mapping the evolution of optically generated rotational wave packets in a room-temperature ensemble of D_2 *(4 pages)* 023414
W. A. Bryan, E. M. L. English, J. McKenna, J. Wood, C. R. Calvert, I. C. E. Turcu, R. Torres, J. L. Collier, I. D. Williams, and W. R. Newell

Effect of focal geometry on radiation from atomic ionization in an ultrastrong and ultrafast laser field *(7 pages)* 023415
Isaac Ghebregziabher and Barry C. Walker

Anomalous ionization efficiency by few-cycle pulses in the multiphoton ionization regime *(4 pages)* 023416
Chengpu Liu and Takashi Nakajima

Chirping a two-photon transition in a multistate ladder *(10 pages)* 023417
Wolfgang Merkel, Holger Mack, Wolfgang P. Schleich, Eric Lutz, Gerhard G. Paulus, and Bertrand Girard

Interference effects in above-threshold ionization from diatomic molecules: Determining the internuclear separation *(9 pages)* 023418
H. Hetzheim, C. Figueira de Morisson Faria, and W. Becker

Time-optimal control of a two-level dissipative quantum system *(11 pages)* 023419
D. Sugny, C. Kontz, and H. R. Jauslin

Phenomena in *J*-coupled nuclear magnetic resonance spectroscopy in low magnetic fields *(11 pages)* 023420
Stephan Appelt, F. Wolfgang Häsing, Holger Kühn, and Bernhard Blümich

Interaction-induced quantum ratchet in a Bose-Einstein condensate *(5 pages)* 023421
Dario Poletti, Giuliano Benenti, Giulio Casati, and Baowen Li

Gain-dispersion coupling induced by transient light shifts in an atomic medium *(6 pages)* 023422
J. C. Delagnes and M. A. Bouchene

Electron detachment from negative ions by few-cycle laser pulses: Dependence on pulse duration *(9 pages)* 023423
Christian Arendt, Darko Dimitrovski, and John S. Briggs

Atomic hyperfine resonances in a magnetic quadrupole field *(6 pages)* 023424
Shahpoor Saeidian, Igor Lesanovsky, and Peter Schmelcher

Magnetic-field-assisted stimulated laser cooling in the (1+3)-level atomic system *(10 pages)* 023425
Deshui Yu and Jingbiao Chen

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Subcycle dynamics in the laser ionization of molecules *(4 pages)* 023426
Xinhua Xie, M. Wickenhauser, W. Boutu, H. Merdji, P. Salières, and A. Scrinzi

Alternative descriptions of the light-matter interaction beyond the dipole approximation *(4 pages)* 023427
Sølve Selstø and Morten Førre

Combined static potentials for confinement of neutral species *(9 pages)* 023428
Leonardo Ricci, Davide Bassi, and Andrea Bertoldi

Matter waves

Formation of a condensed state with a macroscopic number of phonons in ultracold Bose gases *(9 pages)* 023601
Yu. Kagan and L. A. Manakova

Quantum dynamics of two bosons in an anharmonic trap: Collective versus internal excitations *(8 pages)* 023602
Christian Matthies, Sascha Zöllner, Hans-Dieter Meyer, and Peter Schmelcher

Delocalizing transition in one-dimensional condensates in optical lattices due to inhomogeneous interactions *(5 pages)* 023603
Yu. V. Bludov, V. A. Brazhnyi, and V. V. Konotop

Bose-Einstein condensation temperature of dipolar gas in anisotropic harmonic trap *(11 pages)* 023604
K. Glaum and A. Pelster

Probing *n*-spin correlations in optical lattices *(7 pages)* 023605
Chuanwei Zhang, V. W. Scarola, and S. Das Sarma

Spin structures of spin-1 bosonic atoms trapped in an optical lattice with harmonic confinement *(9 pages)* 023606
Makoto Yamashita and Michael W. Jack

Tunneling couplings in discrete lattices, single-particle band structure, and eigenstates of interacting atom pairs *(6 pages)* 023607
Rune Piil and Klaus Mølmer

Nonlinear tunneling in two-dimensional lattices *(14 pages)* 023608
V. A. Brazhnyi, V. V. Konotop, V. Kuzmiak, and V. S. Shchesnovich

Thermodynamical properties of a rotating ideal Bose gas *(6 pages)* 023609
Sebastian Kling and Axel Pelster

Stability of coreless vortices in ferromagnetic spinor Bose-Einstein condensates *(7 pages)* 023610
V. Pietilä, M. Möttönen, and S. M. M. Virtanen

Collective oscillations of a Bose-Fermi mixture: Effect of unequal masses of Bose and Fermi particles *(7 pages)* 023611
Arup Banerjee

One-dimensional superfluid Bose-Fermi mixture: Mixing, demixing, and bright solitons *(11 pages)* 023612
Sadhan K. Adhikari and Luca Salasnich

Fractional quantum Hall effect in optical lattices *(16 pages)* 023613
M. Hafezi, A. S. Sørensen, E. Demler, and M. D. Lukin

Spin-polarized Fermi superfluids as Bose-Fermi mixtures *(12 pages)* 023614
E. Taylor, A. Griffin, and Y. Ohashi

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Soliton oscillations in collisionally inhomogeneous attractive Bose-Einstein condensates *(6 pages)* 023615
P. Niarchou, G. Theocharis, P. G. Kevrekidis, P. Schmelcher, and D. J. Frantzeskakis

Quantum vortices in optical lattices *(4 pages)* 023616
P. Vignolo, R. Fazio, and M. P. Tosi

Quantum de Laval nozzle: Stability and quantum dynamics of sonic horizons in a toroidally trapped Bose gas containing a superflow *(12 pages)* 023617
P. Jain, A. S. Bradley, and C. W. Gardiner

Quantum optics, physics of lasers, nonlinear optics, classical optics

Combined solitons in generalized coupled mode equations of a nonlinear optical Bragg grating *(8 pages)* 023801
Husin Alatas

Analysis of bistability conditions between lasing and nonlasing states for a vertical-cavity surface-emitting laser with frequency-selective optical feedback using an envelope approximation *(14 pages)* 023802
A. V. Naumenko, N. A. Loiko, and T. Ackemann

Quantum-noise power spectrum of fields with discrete classical components *(8 pages)* 023803
Jan Harms, Paul Cochrane, and Andreas Freise

Dynamics of an atom in an *n*-mode radiation field *(8 pages)* 023804
Papri Saha

High-order harmonic generation from laser plasma produced by pulses of different duration *(6 pages)* 023805
R. A. Ganeev, M. Suzuki, M. Baba, and H. Kuroda

Optical lattice polarization effects on magnetically induced optical atomic clock transitions *(6 pages)* 023806
A. V. Taichenachev, V. I. Yudin, and C. W. Oates

Oscillation regimes of a solid-state ring laser with active beat-note stabilization: From a chaotic device to a ring-laser gyroscope *(9 pages)* 023807
Sylvain Schwartz, Gilles Feugnet, Evguenii Lariontsev, and Jean-Paul Pocholle

Continuous-variable entanglement in a nondegenerate three-level laser with a parametric oscillator *(9 pages)* 023808
Eyob Alebachew

Tunable optical anisotropy in three-dimensional photonic crystals *(4 pages)* 023809
Ming Che, Zhi-Yuan Li, and Rong-Juan Liu

Modeling of light-matter interactions with neural networks *(7 pages)* 023810
Reimer Selle, Gerhard Vogt, Tobias Brixner, Gustav Gerber, Richard Metzler, and Wolfgang Kinzel

Optical activity in planar chiral metamaterials: Theoretical study *(12 pages)* 023811
Benfeng Bai, Yuri Svirko, Jari Turunen, and Tuomas Vallius

Frequency-filtered storage of parametric fluorescence with electromagnetically induced transparency *(5 pages)* 023812
K. Akiba, K. Kashiwagi, T. Yonehara, and M. Kozuma

Angular dependence of Dicke-narrowed electromagnetically induced transparency resonances *(5 pages)* 023813
M. Shuker, O. Firstenberg, R. Pugatch, A. Ben-Kish, A. Ron, and N. Davidson

Self-trapped modes in highly nonlocal nonlinear media *(5 pages)* 023814
Servando Lopez-Aguayo and Julio C. Gutiérrez-Vega

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Resonant activation in bistable semiconductor lasers *(8 pages)* 023815
Stefano Lepri and Giovanni Giacomelli

Direct observation of stopped light in a whispering-gallery-mode microresonator *(4 pages)* 023816
A. A. Savchenkov, A. B. Matsko, V. S. Ilchenko, D. Strekalov, and L. Maleki

Efficient amplification of mid- to far-infrared pulses due to optical pulse conversion in waveguiding quantum-well heterostructures *(12 pages)* 023817
V. A. Kukushkin

Entangled light via nonlinear vacuum-multiparticle interactions *(5 pages)* 023818
Mihai Macovei and Gao-xiang Li

Time scales and relaxation dynamics in quantum-dot lasers *(7 pages)* 023819
Thomas Erneux, Evgeny A. Viktorov, and Paul Mandel

Angular momentum transfer in optically induced photonic lattices *(5 pages)* 023820
Milan S. Petrović, Dragana M. Jović, Milivoj R. Belić, and Slobodan Prvanović

Threshold of random lasers in the incoherent transport regime *(6 pages)* 023821
R. Pierrat and R. Carminati

Symmetry analysis and numerical simulation of mode characteristics for equilateral-polygonal optical microresonators *(6 pages)* 023822
Yue-De Yang and Yong-Zhen Huang

Direct space-time observation of pulse tunneling in an electromagnetic band gap *(6 pages)* 023823
Serge Doiron, Alain Haché, and Herbert G. Winful

Classical correlated imaging from the perspective of coherent-mode representation *(5 pages)* 023824
Jing Cheng and Shensheng Han

Light-assisted non-Poissonian fluorescence blinking from bosonic composite reservoirs *(4 pages)* 023825
Adrián A. Budini

Manipulating slow-light propagation modes in cold atomic media *(5 pages)* 023826
Jing Cheng and Shensheng Han

Propagation of frequency-chirped laser pulses in a medium of atoms with a Λ-level scheme *(8 pages)* 023827
G. Demeter, D. Dzsotjan, and G. P. Djotyan

Transverse correlations in triphoton entanglement: Geometrical and physical optics *(13 pages)* 023828
Jianming Wen, P. Xu, Morton H. Rubin, and Yanhua Shih

Quantum description of the high-order harmonic generation in multiphoton and tunneling regimes *(7 pages)* 023829
J. A. Pérez-Hernández and L. Plaja

Inferring periodic orbits from spectra of simply shaped microlasers *(13 pages)* 023830
M. Lebental, N. Djellali, C. Arnaud, J.-S. Lauret, J. Zyss, R. Dubertrand, C. Schmit, and E. Bogomolny

Demonstration of the 101st harmonic generated from a laser-produced manganese plasma *(7 pages)* 023831
R. A. Ganeev, L. B. Elouga Bom, J.-C. Kieffer, M. Suzuki, H. Kuroda, and T. Ozaki

Variable pattern of high-order harmonic spectra from a laser-produced plasma by using the chirped pulses of narrow-bandwidth radiation *(8 pages)* 023832
R. A. Ganeev, M. Suzuki, P. V. Redkin, M. Baba, and H. Kuroda

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Topological suppression of optical tunneling in a twisted annular fiber *(6 pages)* 023833
M. Ornigotti, G. Della Valle, D. Gatti, and S. Longhi

Quantum-mechanical formulation of light propagation: A multiple-scattering approach *(9 pages)* 023834
Wei Guo

BRIEF REPORTS

Fundamental concepts

Multipartite positive-partial-transpose inequalities exponentially stronger than local reality inequalities *(4 pages)* 024101
Koji Nagata

Quantum information

One-step generation of cluster states in superconducting charge qubits coupled with a nanomechanical resonator *(4 pages)* 024301
Gang Chen, Zidong Chen, Lixian Yu, and Jiuqing Liang

Unconventional geometric quantum computation in a two-mode cavity *(4 pages)* 024302
Chunfeng Wu, Zisheng Wang, Xun-Li Feng, Hsi-Sheng Goan, L. C. Kwek, C. H. Lai, and C. H. Oh

Holevo capacity of attenuation channels assisted by linear amplifiers *(4 pages)* 024303
Masaki Sohma and Osamu Hirota

Quantum adiabatic computation and adiabatic conditions *(4 pages)* 024304
Zhaohui Wei and Mingsheng Ying

Atomic and molecular collisions and interactions

Excitation of the $3p^5\,5p$ levels of argon from the $3p^5\,4s$ metastable states *(4 pages)* 024701
Lalita Sharma, Rajesh Srivastava, and A. D. Stauffer

Fully relativistic R-matrix study of the interaction between a slow electron and atomic iodine: Scattering and photodetachment *(4 pages)* 024702
Jianhua Wu and Jianmin Yuan

Absolute triple-differential cross sections for ionization-excitation of helium *(4 pages)* 024703
K. Bartschat, I. Bray, D. V. Fursa, and A. T. Stelbovics

Electron-impact double ionization of helium at high energies *(3 pages)* 024704
M. S. Pindzola, F. Robicheaux, and J. Colgan

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

Dependence of secondary-electron emission on the emergent angle of frozen-charged H^0 and H^+ projectiles penetrating a thin carbon foil *(4 pages)* 024901
H. Ogawa, T. Ohata, K. Ishii, N. Sakamoto, and T. Kaneko

Atomic and molecular processes in external fields

Shape of the coherent-population-trapping resonances and high-rank polarization moments *(4 pages)* 025401
S. Gateva, L. Petrov, E. Alipieva, G. Todorov, V. Domelunksen, and V. Polischuk

(Continued)

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Angular anisotropy parameters and recoil-ion momentum distribution in two-photon double ionization of helium *(4 pages)* 025402
A. S. Kheifets, I. A. Ivanov, and Igor Bray

Matter waves

Density-functional theory of the trapped two-dimensional Fermi gas in the unitary regime *(3 pages)* 025601
Brandon P. van Zyl, D. A. W. Hutchinson, and Melodie Need

Quantum optics, physics of lasers, nonlinear optics, classical optics

Conical-emission and shock-front dynamics in femtosecond laser-pulse filamentation *(4 pages)* 025801
F. Bragheri, D. Faccio, A. Couairon, A. Matijosius, G. Tamošauskas, A. Varanavičius, V. Degiorgio, A. Piskarskas, and P. Di Trapani

ERRATA

Erratum: Light evolution in arbitrary two-dimensional waveguide arrays [Phys. Rev. A **75**, 053814 (2007)] *(1 page)* . . . . . 029901(E)
Alexander Szameit, Thomas Pertsch, Felix Dreisow, Stefan Nolte, Andreas Tünnermann, Ulf Peschel, and Falk Lederer

Erratum: Number-conserving approach to a minimal self-consistent treatment of condensate and noncondensate dynamics in a degenerate Bose gas [Phys. Rev. A **75**, 043621 (2007)] *(1 page)* . . . . . 029902(E)
S. A. Gardiner and S. A. Morgan

Publisher's Note: Quantum dynamics of two bosons in an anharmonic trap: Collective versus internal excitations [Phys. Rev. A **75**, 023602 (2007)] *(1 page)* . . . . . 029903(E)
Christian Matthies, Sascha Zöllner, Hans-Dieter Meyer, and Peter Schmelcher

Erratum: Probabilistic teleportation and entanglement matching [Phys. Rev. A **61**, 034301 (2000)] *(1 page)* . . . . . 029904(E)
Wan-Li Li, Chuan-Feng Li, and Guang-Can Guo

Erratum: Local-field correction to one- and two-atom van der Waals interactions [Phys. Rev. A **75**, 042109 (2007)] *(1 page)* . . . . . 029905(E)
Agnes Sambale, Stefan Yoshi Buhmann, Dirk-Gunnar Welsch, and Marin-Slodoban Tomaš

Publisher's Note: Phenomena in *J*-coupled nuclear magnetic resonance spectroscopy in low magnetic fields [Phys. Rev. A **76**, 023420 (2007)] *(1 page)* . . . . . 029906(E)
Stephan Appelt, F. Wolfgang Häsing, Holger Kühn, and Bernhard Blümich