PHYSICAL REVIEW A THIRD SERIES, VOLUME 88, NUMBER 6 DECEMBER 2013

Matter waves and collective properties of cold atoms and molecules

Superfluid–Mott-insulator transition of spin-1 bosons in optical resonators *(5 pages)* 065601
Jun-Ni Wu, Jing Qian, Xing-Dong Zhao, Lu Zhou, and Weiping Zhang

Existence of an energy gap in a one-dimensional Lesanovsky model *(3 pages)* 065602
Hosho Katsura

ERRATA

Publisher's Note: Kinetics of the disordered Bose gas with collisions [Phys. Rev. A **88**, 053611 (2013)] *(1 page)* 069901(E)
G. Schwiete and A. M. Finkel'stein

Erratum: Quantum interference and light polarization effects in unresolvable atomic lines: Application to a precise measurement of the ^{6,7}Li D_2 lines [Phys. Rev. A **87**, 032504 (2013)] *(1 page)* . . . . . 069902(E)
Roger C. Brown, Saijun Wu, J. V. Porto, Craig J. Sansonetti, C. E. Simien, Samuel M. Brewer, Joseph N. Tan, and J. D. Gillaspy

Erratum: Detection of the Abraham force with a succession of short optical pulses [Phys. Rev. A **86**, 025801 (2012)] *(1 page)* . . . . . 069903(E)
Iver Brevik and Simen Å. Ellingsen

Publisher's Note: Theory of radiative electron attachment to molecules: Benchmark study of CN^- [Phys. Rev. A **88**, 052710 (2013)] *(1 page)* . . . . . 069904(E)
Nicolas Douguet, Samantha Fonseca dos Santos, Maurice Raoult, Olivier Dulieu, Ann E. Orel, and Viatcheslav Kokoouline

Publisher's Note: Molecular-frame photoelectron angular distributions of strong-field tunneling from inner orbitals [Phys. Rev. A **88**, 061401(R) (2013)] *(1 page)* . . . . . 069905(E)
Hong Liu, Song-Feng Zhao, Min Li, Yongkai Deng, Chengyin Wu, Xiao-Xin Zhou, Qihuang Gong, and Yunquan Liu

Publisher's Note: Photon-photon interactions in a largely detuned optomechanical cavity [Phys. Rev. A **88**, 053850 (2013)] *(1 page)* . . . . . 069906(E)
Hao-Kun Li, Xue-Xin Ren, Yong-Chun Liu, and Yun-Feng Xiao

Erratum: General approach to Casimir force problems based on local reflection amplitudes and Huygens' principle [Phys. Rev. A **85**, 052516 (2012)] *(1 page)* . . . . . 069907(E)
C. D. Markle and R. Cowsik

PHYSICAL REVIEW A THIRD SERIES, VOLUME 88, NUMBER 6 DECEMBER 2013

Self-focusing and spatial modes in free space and nonlinear waveguides *(4 pages)* 063847
A. M. Zheltikov

Helmholtz bright soliton splitting at nonlocal nonlinear interfaces *(5 pages)* 063848
Zhiwei Shi, Qi Guo, and Huagang Li

Dynamics of a levitated nanosphere by optomechanical coupling and Casimir interaction *(12 pages)* 063849
Wenjie Nie, Yueheng Lan, Yong Li, and Shiyao Zhu

Multimode strong-coupling quantum optomechanics *(14 pages)* 063850
H. Seok, L. F. Buchmann, E. M. Wright, and P. Meystre

Feedback-induced nonlinearity and superconducting on-chip quantum optics *(10 pages)* 063851
Zhong-Peng Liu, Hui Wang, Jing Zhang, Yu-xi Liu, Re-Bing Wu, Chun-Wen Li, and Franco Nori

Casimir force in a compressive transformation medium *(5 pages)* 063852
William M. R. Simpson

Coherent Ising machine based on degenerate optical parametric oscillators *(9 pages)* 063853
Zhe Wang, Alireza Marandi, Kai Wen, Robert L. Byer, and Yoshihisa Yamamoto

Nonlinearity enhancement in optomechanical systems *(5 pages)* 063854
Ling Zhou, Jiong Cheng, Yan Han, and Weiping Zhang

BRIEF REPORTS

Fundamental concepts

Regularization of the Dirac δ potential with minimal length *(4 pages)* 064101
N. Ferkous

Quantum information

Composability of partial-entanglement-breaking channels via entanglement-assisted local operations and classical communication *(3 pages)* 064301
Ryo Namiki

Atomic and molecular structure and dynamics

Far-zone interatomic Casimir-Polder potential between two ground-state atoms outside a Schwarzschild black hole *(6 pages)* 064501
Jialin Zhang and Hongwei Yu

Atomic and molecular processes in external fields, including interactions with strong fields and short pulses

Tunneling electron recaptured by an atomic ion or a molecular ion *(4 pages)* 065401
Xiguo Xie, Cong Wu, Hong Liu, Min Li, Yongkai Deng, Yunquan Liu, Qihuang Gong, and Chengyin Wu

Insensitivity to the long-range Coulomb potential in laser-induced elastic scattering of electrons with ions *(5 pages)* 065402
Zhangjin Chen, Junliang Xu, Weifeng Yang, and Xiaohong Song

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 88, NUMBER 6** **DECEMBER 2013**

Coupling of optical far fields into apertureless plasmonic nanofiber tips *(6 pages)* 063830
David Auwärter, Josip Mihaljevic, Alfred J. Meixner, Claus Zimmermann, and Sebastian Slama

Modeling off-resonant nonlinear-optical cascading in mesoscopic thin films and guest-host molecular systems *(9 pages)* 063831
Nathan J. Dawson, James H. Andrews, and Michael Crescimanno

Dynamically controlled two-color photonic band gaps via balanced four-wave mixing in one-dimensional cold atomic lattices *(6 pages)* 063832
Hong Yang, Liu Yang, Xiao-Chang Wang, Cui-Li Cui, Yan Zhang, and Jin-Hui Wu

Arbitrarily large steady-state bosonic squeezing via dissipation *(10 pages)* 063833
Andreas Kronwald, Florian Marquardt, and Aashish A. Clerk

Lasing and high-temperature phase transitions in atomic systems with dressed-state polaritons *(11 pages)* 063834
I. Yu. Chestnov, A. P. Alodjants, and S. M. Arakelian

Quantum correlations in the one-dimensional driven dissipative XY model *(12 pages)* 063835
Chaitanya Joshi, Felix Nissen, and Jonathan Keeling

Suppression of inhomogeneous broadening using the ac Stark shift *(4 pages)* 063836
D. D. Yavuz, N. R. Brewer, J. A. Miles, and Z. J. Simmons

Distillation of quantum squeezing *(5 pages)* 063837
Radim Filip

Control of electron dynamics with a multicycle two-color spatially inhomogeneous field for efficient single-attosecond-pulse generation *(10 pages)* 063838
Zhe Wang, Pengfei Lan, Jianghua Luo, Lixin He, Qingbin Zhang, and Peixiang Lu

Integrability of $\mathcal{PT}$-symmetric dimers *(8 pages)* 063840
J. Pickton and H. Susanto

Robustness of quantum nonclassicality and non-Gaussianity of single-photon states in attenuating channels *(9 pages)* 063841
Lukáš Lachman and Radim Filip

Propagation of the centroid of the Poynting vector in transversely phase-modulated optical beams in spatially dispersive media *(6 pages)* 063842
Aminul I. Talukder, Tsuyoshi Matsuo, Takahiro Matsumoto, and Makoto Tomita

Higher-order equilibria of temporal soliton molecules in dispersion-managed fibers *(10 pages)* 063843
A. Hause and F. Mitschke

Heralded generation of Bell states using atomic ensembles *(6 pages)* 063844
David Shwa, Raphael D. Cohen, Alex Retzker, and Nadav Katz

Negative azimuthal force of nanofiber-guided light on a particle *(12 pages)* 063845
Fam Le Kien and A. Rauschenbeutel

Observing controlled state collapse in a single mechanical oscillator via a direct probe of energy variance *(8 pages)* 063846
A. A. Gangat

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 88, NUMBER 6** **DECEMBER 2013**

Defect-guided Airy beams in optically induced waveguide arrays *(4 pages)* 063815
N. M. Lučić, B. M. Bokić, D. Ž. Grujić, D. V. Pantelić, B. M. Jelenković, A. Piper, D. M. Jović, and D. V. Timotijević

Nonparaxial accelerating Bessel-like beams *(10 pages)* 063816
Ioannis D. Chremmos and Nikolaos K. Efremidis

Coherent propagation of a single photon in a lossless medium: 0π pulse formation, storage, and retrieval in multiple temporal modes *(9 pages)* 063817
Sh. Petrosyan and Yu. Malakyan

Measurement of the Kerr nonlinear refractive index of Cs vapor *(6 pages)* 063818
Michelle O. Araújo, Hugo L. D. de S. Cavalcante, Marcos Oriá, Martine Chevrollier, Thierry Passerat de Silans, Romeu Castro, and Danieverton Moretti

Engineering of nonclassical motional states in optomechanical systems *(10 pages)* 063819
Xun-Wei Xu, Hui Wang, Jing Zhang, and Yu-xi Liu

Quantum-enhanced phase estimation with an amplified Bell state *(5 pages)* 063820
Jaspreet Sahota and Daniel F. V. James

Single-photon transport in a one-dimensional waveguide coupling to a hybrid atom-optomechanical system *(8 pages)* 063821
W. Z. Jia and Z. D. Wang

Spontaneous parametric down-conversion photon sources are scalable in the asymptotic limit for boson sampling *(5 pages)* 063822
Keith R. Motes, Jonathan P. Dowling, and Peter P. Rohde

Feedback control of Rabi oscillations in circuit QED *(6 pages)* 063823
Wei Cui and Franco Nori

Mode invisibility and single-photon detection *(11 pages)* 063824
Marvellous Onuma-Kalu, Robert B. Mann, and Eduardo Martín-Martínez

Cooperativity of a few quantum emitters in a single-mode cavity *(7 pages)* 063825
Eduardo Mascarenhas, Dario Gerace, Marcelo França Santos, and Alexia Auffèves

Switching time and energy in bistable injection-locked semiconductor multi-quantum-well Fabry-Perot lasers *(8 pages)* 063826
M. M. Krstić, J. V. Crnjanski, and D. M. Gvozdić

Nonlinear frequency conversion of fields with orbital angular momentum using quasi-phase-matching *(7 pages)* 063827
Guang-hao Shao, Zi-jian Wu, Jin-hui Chen, Fei Xu, and Yan-qing Lu

Cubic-quintic condensate solitons in four-wave mixing *(5 pages)* 063828
Zhenkun Wu, Yiqi Zhang, Chenzhi Yuan, Feng Wen, Huaibin Zheng, Yanpeng Zhang, and Min Xiao

Switching on and off of ultrastrong light-matter interaction: Photon statistics of quantum vacuum radiation *(10 pages)* 063829
L. Garziano, A. Ridolfo, R. Stassi, O. Di Stefano, and S. Savasta

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A THIRD SERIES, VOLUME 88, NUMBER 6 DECEMBER 2013

Role of anisotropy in dipolar bosons in triple-well potentials *(7 pages)* 063645
A. Gallemí, M. Guilleumas, R. Mayol, and A. Sanpera

Two-component Bose gases with one-body and two-body couplings *(15 pages)* 063646
Samuel Lellouch, Tung-Lam Dao, Thomas Koffel, and Laurent Sanchez-Palencia

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

Fermionized photons in the ground state of one-dimensional coupled cavities *(15 pages)* 063801
Adam G. D'Souza, Barry C. Sanders, and David L. Feder

Generating entangled spin states for quantum metrology by single-photon detection *(5 pages)* 063802
Robert McConnell, Hao Zhang, Senka Ćuk, Jiazhong Hu, Monika H. Schleier-Smith, and Vladan Vuletić

Multipolar hierarchy of efficient quantum polarization measures *(8 pages)* 063803
P. de la Hoz, A. B. Klimov, G. Björk, Y.-H. Kim, C. Müller, Ch. Marquardt, G. Leuchs, and L. L. Sánchez-Soto

THz generation by optical Cherenkov emission from ionizing two-color laser pulses *(9 pages)* 063804
L. A. Johnson, J. P. Palastro, T. M. Antonsen, and K. Y. Kim

Singular analysis of Fano resonances in plasmonic nanostructures *(6 pages)* 063805
V. Grigoriev, S. Varault, G. Boudarham, B. Stout, J. Wenger, and N. Bonod

Photonic simulation of system-environment interaction: Non-Markovian processes and dynamical decoupling *(7 pages)* 063806
Chang-Ling Zou, Xiang-Dong Chen, Xiao Xiong, Fang-Wen Sun, Xu-Bo Zou, Zheng-Fu Han, and Guang-Can Guo

Characterizing the nonclassicality of mesoscopic optical twin-beam states *(9 pages)* 063807
Alessia Allevi, Marco Lamperti, Maria Bondani, Jan Peřina, Jr., Václav Michálek, Ondřej Haderka, and Radek Machulka

Laser-induced coherent population trapping in C_{60} *(8 pages)* 063808
G. P. Zhang and Thomas F. George

Quantum backaction in spinor-condensate magnetometry *(7 pages)* 063809
S. K. Steinke, S. Singh, P. Meystre, K. C. Schwab, and M. Vengalattore

Spin-based second-harmonic generation by metal nanoparticles *(6 pages)* 063810
Yineng Liu and Xiangdong Zhang

Dissipative transverse-field Ising model: Steady-state correlations and spin squeezing *(8 pages)* 063811
Tony E. Lee and Ching-Kit Chan

Photon correlations from ultrastrong optical nonlinearities *(9 pages)* 063812
Alessandro Ridolfo, Elena del Valle, and Michael J. Hartmann

Time-reversed two-photon interferometry for phase superresolution *(5 pages)* 063813
Kazuhisa Ogawa, Shuhei Tamate, Hirokazu Kobayashi, Toshihiro Nakanishi, and Masao Kitano

Spin-orbit-interaction-induced generation of optical vortices in multihelicoidal fibers *(9 pages)* 063814
C. N. Alexeyev, A. N. Alexeyev, B. P. Lapin, G. Milione, and M. A. Yavorsky

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 88, NUMBER 6** **DECEMBER 2013**

Effective dynamics of cold atoms flowing in two ring-shaped optical potentials with tunable tunneling *(11 pages)* 063627
Davit Aghamalyan, Luigi Amico, and L. C. Kwek

Spin turbulence with small spin magnitude in spin-1 spinor Bose-Einstein condensates *(9 pages)* 063628
Kazuya Fujimoto and Makoto Tsubota

Competition of spin and charge excitations in the one-dimensional Hubbard model *(10 pages)* 063629
Bruno Sciolla, Akiyuki Tokuno, Shun Uchino, Peter Barmettler, Thierry Giamarchi, and Corinna Kollath

Dissipative effects on the superfluid-to-insulator transition in mixed-dimensional optical lattices *(16 pages)* 063630
E. Malatsetxebarria, Zi Cai, U. Schollwöck, and Miguel A. Cazalilla

Edge-state instabilities of bosons in a topological band *(6 pages)* 063631
Ryan Barnett

Universal quantum computation with Majorana fermion edge modes through microwave spectroscopy of quasi-one-dimensional cold gases in optical lattices *(14 pages)* 063632
Bhuvanesh Sundar and Erich J. Mueller

Threshold for creating excitations in a stirred superfluid ring *(7 pages)* 063633
K. C. Wright, R. B. Blakestad, C. J. Lobb, W. D. Phillips, and G. K. Campbell

Lattice solitons with quadrupolar intersite interactions *(10 pages)* 063635
Yongyao Li, Jingfeng Liu, Wei Pang, and Boris A. Malomed

Breathing mode in the Bose-Hubbard chain with a harmonic trapping potential *(7 pages)* 063636
Wladimir Tschischik, Roderich Moessner, and Masudul Haque

Spin-orbit coupling effects on the superfluidity of a Fermi gas in an optical lattice *(6 pages)* 063637
Q. Sun, G.-B. Zhu, W.-M. Liu, and A.-C. Ji

Landau damping in a collisionless dipolar Bose gas *(10 pages)* 063638
Stefan S. Natu and Ryan M. Wilson

Inelastic collisions of optically trapped metastable calcium atoms *(5 pages)* 063639
Purbasha Halder, Hannes Winter, and Andreas Hemmerich

Mean-field yrast spectrum of a two-component Bose gas in ring geometry: Persistent currents at higher angular momentum *(12 pages)* 063640
Z. Wu and E. Zaremba

Ground-state fragmentation phase transition for attractive bosons in anisotropic traps *(5 pages)* 063641
N. C. Cizek and M. A. Kasevich

Coherence dynamics of a two-mode Bose-Einstein condensate coupled with the environment *(6 pages)* 063642
Yixiao Huang, Qing-Shou Tan, Li-Bin Fu, and Xiaoguang Wang

Pair condensation in a finite trapped Fermi gas *(6 pages)* 063643
C. N. Gilbreth and Y. Alhassid

Source of entangled atom pairs on demand using the Rydberg blockade *(8 pages)* 063644
S. Wüster, S. Möbius, M. Genkin, A. Eisfeld, and J. M. Rost

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 88, NUMBER 6** **DECEMBER 2013**

Stability and dynamics of cross solitons in harmonically confined Bose-Einstein condensates *(6 pages)* 063610
Tadhg Morgan and Thomas Busch

Quench dynamics of a strongly interacting resonant Bose gas *(5 pages)* 063611
Xiao Yin and Leo Radzihovsky

Stability criterion for superfluidity based on the density spectral function *(18 pages)* 063612
Shohei Watabe and Yusuke Kato

Phase diagram and pair Tomonaga-Luttinger liquid in a Bose-Hubbard model with flat bands *(5 pages)* 063613
Shintaro Takayoshi, Hosho Katsura, Noriaki Watanabe, and Hideo Aoki

Condensation energy of a spin-1/2 strongly interacting Fermi gas *(6 pages)* 063614
N. Navon, S. Nascimbène, X. Leyronas, F. Chevy, and C. Salomon

Universal scaling at nonthermal fixed points of a two-component Bose gas *(12 pages)* 063615
Markus Karl, Boris Nowak, and Thomas Gasenzer

Nonlinear Rabi oscillations in a Bose-Einstein condensate *(8 pages)* 063616
Nikolay N. Rosanov

Counter-rotating vortices in miscible two-component Bose-Einstein condensates *(8 pages)* 063617
Shungo Ishino, Makoto Tsubota, and Hiromitsu Takeuchi

Low-temperature properties of an integrable spin-3/2 gas with weak external magnetic field *(8 pages)* 063618
Yuzhu Jiang, Junpeng Cao, and Hai-Qing Lin

Unconventional superfluid phases and the phase dynamics in spin-orbit-coupled Bose systems *(10 pages)* 063619
Anirban Dutta and Saptarshi Mandal

Persistent-current formation in a high-temperature Bose-Einstein condensate: An experimental test for classical-field theory *(7 pages)* 063620
S. J. Rooney, T. W. Neely, B. P. Anderson, and A. S. Bradley

Dark-soliton dynamics and snake instability in superfluid Fermi gases trapped by an anisotropic harmonic potential *(8 pages)* 063621
Wen Wen, Changqing Zhao, and Xiaodong Ma

Efficient adiabatic tracking of driven quantum nonlinear systems *(5 pages)* 063622
S. Guérin, M. Gevorgyan, C. Leroy, H. R. Jauslin, and A. Ishkhanyan

Phase operators and blurring time of a pair-condensed Fermi gas *(16 pages)* 063623
H. Kurkjian, Y. Castin, and A. Sinatra

Finite-resolution fluctuation measurements of a trapped Bose-Einstein condensate *(10 pages)* 063624
R. N. Bisset, C. Ticknor, and P. B. Blakie

One-dimensional Bose-Hubbard model with local three-body interactions *(6 pages)* 063625
Satoshi Ejima, Florian Lange, Holger Fehske, Florian Gebhard, and Kevin zu Münster

Atom laser based on four-wave mixing with Bose-Einstein condensates in nonlinear lattices *(5 pages)* 063626
T. Wasak, V. V. Konotop, and M. Trippenbach

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A THIRD SERIES, VOLUME 88, NUMBER 6 DECEMBER 2013

Abnormal dependence of strong-field-ionization-induced nitrogen lasing on polarization ellipticity of the driving field *(5 pages)* 063417
Haisu Zhang, Chenrui Jing, Guihua Li, Hongqiang Xie, Jinping Yao, Bin Zeng, Wei Chu, Jielei Ni, Huailiang Xu, and Ya Cheng

Feshbach-optimized photoassociation of ultracold $^{6}Li^{87}Rb$ molecules with short pulses *(10 pages)* 063418
Marko Gacesa, Subhas Ghosal, Jason N. Byrd, and Robin Côté

High-harmonic generation from hydrogen atoms driven by two-color mutually orthogonal laser fields *(8 pages)* 063419
Mitsuko Murakami, Oleg Korobkin, and Marko Horbatsch

Dissociation and dissociative ionization of H_2^+ using the time-dependent surface flux method *(11 pages)* 063420
Lun Yue and Lars Bojer Madsen

Relativistic features and time delay of laser-induced tunnel ionization *(21 pages)* 063421
Enderalp Yakaboylu, Michael Klaiber, Heiko Bauke, Karen Z. Hatsagortsyan, and Christoph H. Keitel

Nonresonant EUV-UV two-color two-photon ionization of He studied by single-shot photoelectron spectroscopy *(6 pages)* 063422
M. Fushitani, Y. Hikosaka, A. Matsuda, T. Endo, E. Shigemasa, M. Nagasono, T. Sato, T. Togashi, M. Yabashi, T. Ishikawa, and A. Hishikawa

PART B

Matter waves and collective properties of cold atoms and molecules

Topological uniform superfluid and Fulde-Ferrell-Larkin-Ovchinnikov phases in three-dimensional to one-dimensional crossover of spin-orbit-coupled Fermi gases *(8 pages)* 063601
Kangjun Seo, Chuanwei Zhang, and Sumanta Tewari

Coherent states of composite bosons *(4 pages)* 063602
Su-Yong Lee, Jayne Thompson, Paweł Kurzyński, Akihito Soeda, and Dagomir Kaszlikowski

Experimental realization of a quantum ratchet through phase modulation *(4 pages)* 063603
D. H. White, S. K. Ruddell, and M. D. Hoogerland

Sharp crossover from composite fermionization to phase separation in microscopic mixtures of ultracold bosons *(5 pages)* 063604
M. A. Garcia-March, B. Juliá-Díaz, G. E. Astrakharchik, Th. Busch, J. Boronat, and A. Polls

Renormalization-group analysis of *p*-orbital Bose-Einstein condensates in a square optical lattice *(7 pages)* 063605
Boyang Liu, Xiao-Lu Yu, and Wu-Ming Liu

Dynamics of entanglement in a dissipative Bose-Hubbard dimer *(11 pages)* 063606
Tadeusz Pudlik, Holger Hennig, D. Witthaut, and David K. Campbell

Dispersive probing of driven pseudospin dynamics in a gradient field *(10 pages)* 063607
Amita B. Deb, Bianca J. Sawyer, and Niels Kjærgaard

Interaction-induced coherence among polar bosons stored in triple-well potentials *(7 pages)* 063608
Bo Xiong and Uwe R. Fischer

Precision measurements of temperature and chemical potential of quantum gases *(22 pages)* 063609
Ugo Marzolino and Daniel Braun

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 88, NUMBER 6** **DECEMBER 2013**

Electron recombination, photoionization, and scattering via many-electron compound resonances *(6 pages)* 062713
V. A. Dzuba, V. V. Flambaum, G. F. Gribakin, C. Harabati, and M. G. Kozlov

Atomic and molecular processes in external fields, including interactions with strong fields and short pulses

Photon-scattering-rate measurement of atoms in a magneto-optical trap *(12 pages)* 063401
Kais Jooya, Nam Musterer, Kirk W. Madison, and James L. Booth

X-ray frequency combs from optically controlled resonance fluorescence *(10 pages)* 063402
Stefano M. Cavaletto, Zoltán Harman, Christian Buth, and Christoph H. Keitel

Capture and isolation of highly charged ions in a unitary Penning trap *(9 pages)* 063403
Samuel M. Brewer, Nicholas D. Guise, and Joseph N. Tan

Optical pumping of rubidium atoms frozen in solid argon *(4 pages)* 063404
Andrew N. Kanagin, Sameer K. Regmi, Pawan Pathak, and Jonathan D. Weinstein

Evaporative cooling of reactive polar molecules confined in a two-dimensional geometry *(10 pages)* 063405
Bihui Zhu, Goulven Quéméner, Ana M. Rey, and Murray J. Holland

Experimental demonstration of composite adiabatic passage *(9 pages)* 063406
Daniel Schraft, Thomas Halfmann, Genko T. Genov, and Nikolay V. Vitanov

Imaging of relaxation times and microwave field strength in a microfabricated vapor cell *(10 pages)* 063407
Andrew Horsley, Guan-Xiang Du, Matthieu Pellaton, Christoph Affolderbach, Gaetano Mileti, and Philipp Treutlein

One-photon double ionization of H_2 with arbitrary orientation *(10 pages)* 063408
Wei-Chao Jiang, Liang-You Peng, Ji-Wei Geng, and Qihuang Gong

Relationship between polarization-averaged molecular-frame photoelectron angular distributions and geometry *(5 pages)* 063409
Etienne Plésiat, Piero Decleva, and Fernando Martín

Arbitrarily accurate passband composite pulses for dynamical suppression of amplitude noise *(7 pages)* 063410
Elica Kyoseva and Nikolay V. Vitanov

Complete determination of the state of elliptically polarized light by electron-ion vector correlations *(5 pages)* ... 063411
K. Veyrinas, C. Elkharrat, S. Marggi Poullain, N. Saquet, D. Dowek, R. R. Lucchese, G. A. Garcia, and L. Nahon

Time-resolved ionization process of hydrogen atoms in strong laser fields *(5 pages)* 063412
Sen Cui and Feng He

Highly responsive ac scalar atomic magnetometer with long relaxation time *(6 pages)* 063413
A. Terao, K. Ban, S. Ichihara, N. Mizutani, and T. Kobayashi

Entanglement between electronic and vibrational degrees of freedom in a laser-driven molecular system *(12 pages)* 063415
Mihaela Vatasescu

Bohmian-trajectory analysis of high-order-harmonic generation: Ensemble averages, nonlocality, and quantitative aspects *(9 pages)* 063416
J. Wu, B. B. Augstein, and C. Figueira de Morisson Faria

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 88, NUMBER 6** **DECEMBER 2013**

Frequency measurement of the $6P_{3/2} \rightarrow 7S_{1/2}$ transition of thallium *(5 pages)* 062513
Nang-Chian Shie, Chun-Yu Chang, Wen-Feng Hsieh, Yi-Wei Liu, and Jow-Tsong Shy

Light sea fermions in electron-proton and muon-proton interactions *(6 pages)* 062514
U. D. Jentschura

Polarization correlations in the elastic Rayleigh scattering of photons by hydrogenlike ions *(9 pages)* 062515
A. Surzhykov, V. A. Yerokhin, T. Jahrsetz, P. Amaro, Th. Stöhlker, and S. Fritzsche

Atomic and molecular collisions and interactions

Electron-impact vibrational excitation of vibrationally excited H_2 molecules involving the resonant $^2\Sigma_g^+$ Rydberg-excited electronic state *(11 pages)* 062701
R. Celiberto, R. K. Janev, V. Laporta, J. Tennyson, and J. M. Wadehra

Modeling enhancement and suppression of vibrational Feshbach resonances in positron annihilation on molecules *(8 pages)* 062702
J. R. Danielson, A. C. L. Jones, M. R. Natisin, and C. M. Surko

Artificial Abelian gauge potentials induced by dipole-dipole interactions between Rydberg atoms *(10 pages)* 062703
A. Cesa and J. Martin

Cross-section calculations for positron scattering from pyrimidine over an energy range from 0.1 to 10000 eV *(13 pages)* 062704
A. G. Sanz, M. C. Fuss, F. Blanco, Z. Mašín, J. D. Gorfinkiel, R. P. McEachran, M. J. Brunger, and G. García

Experimental and theoretical cross sections for molecular-frame electron-impact excitation-ionization of D_2 *(11 pages)* 062705
Julian C. A. Lower, Esam Ali, Susan Bellm, Erich Weigold, Allison Harris, C. G. Ning, and Don Madison

Major role of multielectronic K-L intershell resonant recombination processes in Li- to O-like ions of Ar, Fe, and Kr *(11 pages)* 062706
C. Beilmann, Z. Harman, P. H. Mokler, S. Bernitt, C. H. Keitel, J. Ullrich, and J. R. Crespo López-Urrutia

Calculation of the circular-polarization P_3 Stokes parameter for electron-silver scattering *(5 pages)* 062707
Christopher J. Bostock, Dmitry V. Fursa, and Igor Bray

Thermal electron attachment to F_2 *(6 pages)* 062708
Nicholas S. Shuman, Thomas M. Miller, Albert A. Viggiano, and Ilya I. Fabrikant

Calculations of electron scattering from H_2^+ *(4 pages)* 062709
Mark C. Zammit, Dmitry V. Fursa, and Igor Bray

Electron-impact-ionization dynamics of five C_2 to C_4 perfluorocarbons *(10 pages)* 062710
James N. Bull, Mark Bart, Claire Vallance, and Peter W. Harland

Imaging coherent electronic motion in atoms by ultrafast electron diffraction *(14 pages)* 062711
Hua-Chieh Shao and Anthony F. Starace

Transport properties of electron swarms in tetrahydrofuran under the influence of an applied electric field *(10 pages)* 062712
N. A. Garland, M. J. Brunger, G. Garcia, J. de Urquijo, and R. D. White

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A THIRD SERIES, VOLUME 88, NUMBER 6 DECEMBER 2013

Three-intensity decoy-state method for measurement-device-independent quantum key distribution *(13 pages)* . . . 062339
Zong-Wen Yu, Yi-Heng Zhou, and Xiang-Bin Wang

Open quantum random walks: Bistability on pure states and ballistically induced diffusion *(6 pages)* 062340
Michel Bauer, Denis Bernard, and Antoine Tilloy

Generating robust optical entanglement in weak-coupling optomechanical systems *(7 pages)* 062341
Mark C. Kuzyk, Steven J. van Enk, and Hailin Wang

Direct measurement of the concurrence of two-photon polarization-entangled states *(6 pages)* 062342
Li-Hua Zhang, Qing Yang, Ming Yang, Wei Song, and Zhuo-Liang Cao

Atomic and molecular structure and dynamics

Electrostatic interaction due to patch potentials on smooth conducting surfaces *(8 pages)* 062501
César D. Fosco, Fernando C. Lombardo, and Francisco D. Mazzitelli

Use of two-dimensional photoelectron spectroscopy in the decomposition of an inner-shell excitation spectrum broadened by super-Coster-Kronig decay *(6 pages)* 062502
A. Kivimäki, P. Norman, M. Coreno, M. de Simone, C. Grazioli, R. Totani, B. Ressel, H. Ottosson, and C. Puglia

Investigation of ac Stark shifts in excited states of dysprosium relevant to testing fundamental symmetries *(9 pages)* 062503
C. T. M. Weber, N. Leefer, and D. Budker

Correlation trends in the ground-state static electric dipole polarizabilities of closed-shell atoms and ions *(11 pages)* 062504
Yashpal Singh, B. K. Sahoo, and B. P. Das

Potential functionals versus density functionals *(14 pages)* 062505
Attila Cangi, E. K. U. Gross, and Kieron Burke

Doublet-quartet energy separation in boron: A partitioned-correlation-function-interaction method *(6 pages)* 062506
Charlotte Froese Fischer, Simon Verdebout, Michel Godefroid, Pavel Rynkun, Per Jönsson, and Gediminas Gaigalas

Electron-correlation trends in the hyperfine A and B constants of the Na isoelectronic sequence *(9 pages)* 062507
Narendra Nath Dutta and Sonjoy Majumder

Transition amplitudes, polarizabilities, and energy levels within optical wavelength of highly charged ions Sm^{14+} and Sm^{13+} *(6 pages)* 062509
A. Kozlov, V. A. Dzuba, and V. V. Flambaum

High-resolution photoassociation spectroscopy of the $^6Li_2$ $A(1^1\Sigma_u^+)$ state *(5 pages)* 062510
Will Gunton, Mariusz Semczuk, Nikesh S. Dattani, and Kirk W. Madison

Method for evaluating chemical shifts of x-ray emission lines in molecules and solids *(13 pages)* 062511
Yuriy V. Lomachuk and Anatoly V. Titov

Time-dependent exchange-correlation functional for a Hubbard dimer: Quantifying nonadiabatic effects *(7 pages)* 062512
Johanna I. Fuks, Mehdi Farzanehpour, Ilya V. Tokatly, Heiko Appel, Stefan Kurth, and Angel Rubio

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 88, NUMBER 6** **DECEMBER 2013**

Operational Gaussian Schmidt-number witnesses *(9 pages)* 062323
F. Shahandeh, J. Sperling, and W. Vogel

Fundamental limitations in spin-ensemble quantum memories for cavity fields *(14 pages)* 062324
Brian Julsgaard and Klaus Mølmer

Quench-induced growth of distant entanglement from product and locally entangled states in spin chains *(9 pages)* 062325
Bedoor Alkurtass, Hannu Wichterich, and Sougato Bose

Speeding up and slowing down the relaxation of a qubit by optimal control *(10 pages)* 062326
Victor Mukherjee, Alberto Carlini, Andrea Mari, Tommaso Caneva, Simone Montangero, Tommaso Calarco, Rosario Fazio, and Vittorio Giovannetti

Missing data outside the detector range. II. Application to time-frequency entanglement *(6 pages)* 062327
Megan R. Ray and S. J. van Enk

Dissociation and annihilation of multipartite entanglement structure in dissipative quantum dynamics *(11 pages)* 062328
Sergey N. Filippov, Alexey A. Melnikov, and Mário Ziman

Understanding the effects of leakage in superconducting quantum-error-detection circuits *(7 pages)* 062329
Joydip Ghosh, Austin G. Fowler, John M. Martinis, and Michael R. Geller

Separability from spectrum for qubit-qudit states *(5 pages)* 062330
Nathaniel Johnston

Bounding the entanglement of N qubits with only four measurements *(5 pages)* 062331
S. M. Hashemi Rafsanjani, C. J. Broadbent, and J. H. Eberly

Fast creation of entanglement by interaction with a common bath *(5 pages)* 062332
Nan Qiu and Xiang-Bin Wang

Excitation and state transfer through spin chains in the presence of spatially correlated noise *(9 pages)* 062333
Jan Jeske, Nicolas Vogt, and Jared H. Cole

Implementation of standard quantum error-correction codes for solid-state qubits *(13 pages)* 062334
Tetsufumi Tanamoto

Intrinsic imperfection of self-differencing single-photon detectors harms the security of high-speed quantum cryptography systems *(5 pages)* 062335
Mu-Sheng Jiang, Shi-Hai Sun, Guang-Zhao Tang, Xiang-Chun Ma, Chun-Yan Li, and Lin-Mei Liang

Thermal amplification of field-correlation harvesting *(15 pages)* 062336
Eric G. Brown

Analysis of a controlled phase gate using circular Rydberg states *(7 pages)* 062337
T. Xia, X. L. Zhang, and M. Saffman

Signifying quantum benchmarks for qubit teleportation and secure quantum communication using Einstein-Podolsky-Rosen steering inequalities *(9 pages)* 062338
M. D. Reid

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 88, NUMBER 6** **DECEMBER 2013**

Finite-size key in the Bennett 1992 quantum-key-distribution protocol for Rényi entropies *(4 pages)* 062306
Mhlambululi Mafu, Kevin Garapo, and Francesco Petruccione

Quantum computational universality of Affleck-Kennedy-Lieb-Tasaki states beyond the honeycomb lattice *(9 pages)* 062307
Tzu-Chieh Wei

Simulation of rare events in quantum error correction *(14 pages)* 062308
Sergey Bravyi and Alexander Vargo

Quantum state transfer in the presence of nonhomogeneous external potentials *(5 pages)* 062309
Gian Luca Giorgi and Thomas Busch

Robustness and performance scaling of a quantum computer with respect to a class of static defects *(15 pages)* . . . 062310
Y. S. Nam and R. Blümel

Generation and stabilization of a three-qubit entangled W state in circuit QED via quantum feedback control *(11 pages)* 062311
Shang-Yu Huang, Hsi-Sheng Goan, Xin-Qi Li, and G. J. Milburn

Topological phases and self-correcting memories in interacting anyon systems *(5 pages)* 062312
James R. Wootton

Enhanced thermal stability of the toric code through coupling to a bosonic bath *(13 pages)* 062313
Fabio L. Pedrocchi, Adrian Hutter, James R. Wootton, and Daniel Loss

Adiabatic quantum optimization with the wrong Hamiltonian *(7 pages)* 062314
Kevin C. Young, Robin Blume-Kohout, and Daniel A. Lidar

Genuine fidelity gaps associated with a sequential decomposition of genuinely entangling isometry and unitary operations *(6 pages)* 062315
Hamed Saberi

Three maximally entangled states can require two-way local operations and classical communication for local discrimination *(9 pages)* 062316
Michael Nathanson

Role of complementarity in superdense coding *(11 pages)* 062317
Patrick J. Coles

Improving frequency selection of driven pulses using derivative-based transition suppression *(15 pages)* 062318
F. Motzoi and F. K. Wilhelm

Device-independent quantum key distribution with spin-coupled cavities *(9 pages)* 062319
Alejandro Máttar, Jonatan Bohr Brask, and Antonio Acín

Distillation of free entanglement from bound entangled states using weak measurements *(6 pages)* 062320
S. Baghbanzadeh and A. T. Rezakhani

Joining and splitting the quantum states of photons *(9 pages)* 062321
Elsa Passaro, Chiara Vitelli, Nicolò Spagnolo, Fabio Sciarrino, Enrico Santamato, and Lorenzo Marrucci

Measurement-device-independent quantum key distribution with uncharacterized qubit sources *(9 pages)* 062322
Zhen-Qiang Yin, Chi-Hang Fred Fung, Xiongfeng Ma, Chun-Mei Zhang, Hong-Wei Li, Wei Chen, Shuang Wang, Guang-Can Guo, and Zheng-Fu Han

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A **THIRD SERIES, VOLUME 88, NUMBER 6** **DECEMBER 2013**

Local exclusion principle for identical particles obeying intermediate and fractional statistics *(9 pages)* 062106
Douglas Lundholm and Jan Philip Solovej

Imaginary-time nonuniform mesh method for solving the multidimensional Schrödinger equation: Fermionization and melting of quantum Lennard-Jones crystals *(5 pages)* 062107
Alberto Hernando and Jiří Vaníček

Monogamy inequalities for the Einstein-Podolsky-Rosen paradox and quantum steering *(10 pages)* 062108
M. D. Reid

Compressing measurements in quantum dynamic parameter estimation *(13 pages)* 062109
Easwar Magesan, Alexandre Cooper, and Paola Cappellaro

Pair creation by collision of an intense laser pulse with a high-frequency photon beam *(11 pages)* 062110
A. M. Fedotov and A. A. Mironov

Twofold transition in $\mathcal{PT}$-symmetric coupled oscillators *(8 pages)* 062111
Carl M. Bender, Mariagiovanna Gianfreda, Şahin K. Özdemir, Bo Peng, and Lan Yang

Non-Hermitian quantum rings *(8 pages)* 062112
Stefano Longhi

Noise-assisted Ramsey interferometry *(9 pages)* 062113
U. Dorner

Precision requirements for observing macroscopic quantum effects *(5 pages)* 062114
Tian Wang, Roohollah Ghobadi, Sadegh Raeisi, and Christoph Simon

Transparent Dirac potentials in one dimension: The time-dependent case *(6 pages)* 062115
Gerald V. Dunne and Michael Thies

Hardy's paradox for high-dimensional systems *(5 pages)* 062116
Jing-Ling Chen, Adán Cabello, Zhen-Peng Xu, Hong-Yi Su, Chunfeng Wu, and L. C. Kwek

Quantum phase-space representation for curved configuration spaces *(13 pages)* 062117
Clemens Gneiting, Timo Fischer, and Klaus Hornberger

Quantum information

Enhanced probing of fermion interaction using weak-value amplification *(5 pages)* 062301
Alex Hayat, Amir Feizpour, and Aephraim M. Steinberg

Security of two-way quantum key distribution *(9 pages)* 062302
Normand J. Beaudry, Marco Lucamarini, Stefano Mancini, and Renato Renner

Pseudorandom circuits from Clifford-plus-T gates *(5 pages)* 062303
Yaakov S. Weinstein

State-dependent linear-optical qubit amplifier *(7 pages)* 062304
Karol Bartkiewicz, Antonín Černoch, and Karel Lemr

Criticality, factorization, and long-range correlations in the anisotropic XY model *(8 pages)* 062305
Steve Campbell, Jonathan Richens, Nicola Lo Gullo, and Thomas Busch

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

PHYSICAL REVIEW A THIRD SERIES, VOLUME 88, NUMBER 6 DECEMBER 2013

Orientation dependence of energy absorption and relaxation dynamics of C_{60} in fs-laser pulses *(5 pages)* . . . . . 061403(R)
M. Fischer, J. Handt, G. Seifert, and R. Schmidt

Coherent transition between adjacent Zeeman sublevels in an alkali-metal atom without populating other sublevels *(4 pages)* . . . . . 061404(R)
Huidong Kim, Hyok Sang Han, Jinsin Park, Young-Sik Kim, and D. Cho

Orientation of jet-cooled polar molecules with an intense single-cycle THz pulse *(5 pages)* . . . . . 061405(R)
Kenta Kitano, Nobuhisa Ishii, Natsuki Kanda, Yoshiyuki Matsumoto, Teruto Kanai, Makoto Kuwata-Gonokami, and Jiro Itatani

Spatial correlations between Rydberg atoms in an optical dipole trap *(5 pages)* . . . . . 061406(R)
A. Schwarzkopf, D. A. Anderson, N. Thaicharoen, and G. Raithel

Matter waves and collective properties of cold atoms and molecules

Spin-glass-like behavior in the spin turbulence of spinor Bose-Einstein condensates *(4 pages)* . . . . . 061601(R)
Makoto Tsubota, Yusuke Aoki, and Kazuya Fujimoto

Two-boson composites *(5 pages)* . . . . . 061602(R)
Malte C. Tichy, P. Alexander Bouvrie, and Klaus Mølmer

Breakdown of scale invariance in a quasi-two-dimensional Bose gas due to the presence of the third dimension *(4 pages)* . . . . . 061603(R)
Karina Merloti, Romain Dubessy, Laurent Longchambon, Maxim Olshanii, and Hélène Perrin

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

Optically active mechanical modes of tapered optical fibers *(4 pages)* . . . . . 061801(R)
C. Wuttke, G. D. Cole, and A. Rauschenbeutel

Nonlocal linear compression of two-photon time-interval distribution *(4 pages)* . . . . . 061802(R)
J.-S. Pan, X.-B. Zou, Z.-Y. Zhou, D.-S. Ding, B.-S. Shi, and G.-C. Guo

ARTICLES

Fundamental concepts

Local orthogonality provides a tight upper bound for Hardy's nonlocality *(7 pages)* 062101
Subhadipa Das, Manik Banik, Md. Rajjak Gazi, Ashutosh Rai, and Samir Kunkri

Multipartite quantum eraser in cavity QED *(7 pages)* 062102
R. Rossi, Jr., J. P. Souza, L. A. M. de Souza, and M. C. Nemes

Coherence in a network of two-level systems coupled to a bosonic field *(11 pages)* 062103
Stefan Fischer and Heinz-Peter Breuer

Quantum dynamics simulation with classical oscillators *(12 pages)* 062104
John S. Briggs and Alexander Eisfeld

Dynamical symmetry approach to path integrals of quantum spin systems *(13 pages)* 062105
Matouš Ringel and Vladimir Gritsev

(Continued)

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).

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
P.O. Box 41
Annapolis Junction, MD 20701

THIRD SERIES, VOLUME 88, NUMBER 6
PARTS A AND B

CONTENTS

DECEMBER 2013

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 060101(R)–063422, and Part B pages 063601–069907(E).

PART A

RAPID COMMUNICATIONS

Fundamental concepts

Sub-Heisenberg phase uncertainties *(5 pages)* . . . . . 060101(R)
Luca Pezzé

Quantum information

High-threshold topological quantum error correction against biased noise *(4 pages)* . . . . . 060301(R)
Ashley M. Stephens, William J. Munro, and Kae Nemoto

Spin-reduced density matrices for relativistic particles *(5 pages)* . . . . . 060302(R)
E. R. F. Taillebois and A. T. Avelar

Atomic and molecular structure and dynamics

Magnetic dipole and electric quadrupole moments of the ^{229}Th nucleus *(5 pages)* . . . . . 060501(R)
M. S. Safronova, U. I. Safronova, A. G. Radnaev, C. J. Campbell, and A. Kuzmich

Atomic and molecular collisions and interactions

Optically pumped spin-exchange polarized-electron source *(5 pages)* . . . . . 060701(R)
M. Pirbhai, J. Knepper, E. T. Litaker, D. Tupa, and T. J. Gay

Atomic and molecular processes in external fields, including interactions with strong fields and short pulses

Molecular-frame photoelectron angular distributions of strong-field tunneling from inner orbitals *(5 pages)* . . . . . 061401(R)
Hong Liu, Song-Feng Zhao, Min Li, Yongkai Deng, Chengyin Wu, Xiao-Xin Zhou, Qihuang Gong, and Yunquan Liu

Femtosecond photoelectron diffraction on laser-aligned molecules: Towards time-resolved imaging of molecular structure *(5 pages)* . . . . . 061402(R)
R. Boll, D. Anielski, C. Bostedt, J. D. Bozek, L. Christensen, R. Coffee, S. De, P. Decleva, S. W. Epp, B. Erk, L. Foucar, F. Krasniqi, J. Küpper, A. Rouzée, B. Rudek, A. Rudenko, S. Schorb, H. Stapelfeldt, M. Stener, S. Stern, S. Techert, S. Trippel, M. J. J. Vrakking, J. Ullrich, and D. Rolles

Copyright 2013 by American Physical Society

(Continued)

1050-2947(201312)88:6:A;1-K

The editors and referees of PRA find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. A 88, 020001 (2013).