PHYSICAL REVIEW A THIRD SERIES, VOLUME 90, NUMBER 4 OCTOBER 2014

BRIEF REPORTS

Quantum information

Transferring entangled states through spin chains by boundary-state multiplets *(4 pages)* 044301
Peter Lorenz and Joachim Stolze

Addendum to "Quantum wireless multihop communication based on arbitrary Bell pairs and teleportation" *(4 pages)* 044302
Kan Wang, Yan-Xiao Gong, Xu-Tao Yu, and Sheng-Li Lu

Atomic and molecular collisions and interactions

Role of ionization-excitation processes in the cross section for direct ionization of heavy atomic ions by electron impact *(5 pages)* 044701
J. L. Zeng, L. P. Liu, P. F. Liu, and J. M. Yuan

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

Photoionization of a hydrogen atom in a uniform electric field as visualization of the Stokes phenomenon *(4 pages)* 045401
V. I. Osherov and V. G. Ushakov

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

Electromagnetically induced transparency with controlled van der Waals interaction *(5 pages)* 045801
Huaizhi Wu, Meng-Meng Bian, Li-Tuo Shen, Rong-Xin Chen, Zhen-Biao Yang, and Shi-Biao Zheng

Hamiltonian formulation of the standard $\mathcal{PT}$-symmetric nonlinear Schrödinger dimer *(4 pages)* 045802
I. V. Barashenkov

Phase memory across two single-photon interferometers including wavelength conversion *(4 pages)* 045803
A. Heuer, S. Raabe, and R. Menzel

Connection between the NOON state and a superposition of SU(2) coherent states *(3 pages)* 045804
Barry C. Sanders and Christopher C. Gerry

ERRATA

Erratum: Coherent diffractive imaging of atomic-size objects by means of a deterministic phase-retrieval method [Phys. Rev. A **89**, 053819 (2014)] *(1 page)* . . . . . 049901(E)
Nobuharu Nakajima

Publisher's Note: Faraday waves in collisionally inhomogeneous Bose-Einstein condensates [Phys. Rev. A **89**, 023609 (2014)] *(1 page)* . . . . . 049902(E)
Antun Balaž, Remus Paun, Alexandru I. Nicolin, Sudharsan Balasubramanian, and Radha Ramaswamy

Publisher's Note: Systematic pathway to $\mathcal{PT}$-symmetry breaking in scattering systems [Phys. Rev. A **90**, 043809 (2014)] *(1 page)* . . . . . 049903(E)
P. A. Kalozoumis, G. Pappas, F. K. Diakonos, and P. Schmelcher

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 90, NUMBER 4** **OCTOBER 2014**

Emission of orbital-angular-momentum-entangled photon pairs in a nonlinear ring fiber utilizing spontaneous parametric down-conversion *(12 pages)* 043844
D. Javůrek, J. Svozilík, and J. Peřina, Jr.

Effect of loss on photon-pair generation in nonlinear waveguide arrays *(10 pages)* 043845
Diana A. Antonosyan, Alexander S. Solntsev, and Andrey A. Sukhorukov

Dressed four-wave mixing second-order Talbot effect *(10 pages)* 043846
Haixia Chen, Xun Zhang, Dayu Zhu, Chang Yang, Tao Jiang, Huaibin Zheng, and Yanpeng Zhang

Mode broadening induced by nanoparticles in an optical whispering-gallery microcavity *(10 pages)* 043847
Yuwen Hu, Linbo Shao, Stephen Arnold, Yong-Chun Liu, Cao-Yuan Ma, and Yun-Feng Xiao

Squeezing in a coupled two-mode optomechanical system for force sensing below the standard quantum limit *(7 pages)* 043848
Xunnong Xu and Jacob M. Taylor

Autler-Townes spectroscopy with interaction-induced dephasing *(5 pages)* 043849
Hao Zhang, Linjie Zhang, Limei Wang, Shanxia Bao, Jianming Zhao, Suotang Jia, and Georg Raithel

Tailoring azimuthal optical force on lossy chiral particles in Bessel beams *(11 pages)* 043850
Huajin Chen, Neng Wang, Wanli Lu, Shiyang Liu, and Zhifang Lin

Improving the cooling performance of a mechanical resonator with two-level-system defects *(4 pages)* 043851
Tian Chen and Xiang-Bin Wang

Non-Markovian dynamics of a single-mode cavity strongly coupled to an inhomogeneously broadened spin ensemble *(14 pages)* 043852
Dmitry O. Krimer, Stefan Putz, Johannes Majer, and Stefan Rotter

Bose-Einstein condensation of photons with nonlocal nonlinearity in a dye-doped graded-index microcavity *(12 pages)* 043853
Marcello Calvanese Strinati and Claudio Conti

Squeezed-state generation from single-photon sources *(9 pages)* 043854
Radim Filip and Petr Zapletal

Influence of the imaginary component of the photonic potential on the properties of solitons in $\mathcal{PT}$-symmetric systems *(9 pages)* 043855
Chandroth P. Jisha, Lini Devassy, Alessandro Alberucci, and V. C. Kuriakose

Controllable optical bistability of an asymmetric cavity containing a single two-level atom *(7 pages)* 043857
Xiuwen Xia, Jingping Xu, and Yaping Yang

Interpretation of the coherency matrix for three-dimensional polarization states *(11 pages)* 043858
José J. Gil

Effects of temperature and ground-state coherence decay on enhancement and amplification in a Δ atomic system *(6 pages)* 043859
Manukumara Manjappa, Satya Sainadh Undurti, Asha Karigowda, Andal Narayanan, and Barry C. Sanders

(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 90, NUMBER 4** **OCTOBER 2014**

Talbot self-imaging in $\mathcal{PT}$-symmetric complex crystals *(10 pages)* 043827
Stefano Longhi

Multimode effects in cavity QED based on a one-dimensional cavity array *(7 pages)* 043828
Wei Zhu, Z. H. Wang, and D. L. Zhou

Spin conservation in high-order-harmonic generation using bicircular fields *(7 pages)* 043829
Emilio Pisanty, Suren Sukiasyan, and Misha Ivanov

Microscopic theory of diffraction of light from a small hole *(16 pages)* 043830
Jesper Jung and Ole Keller

Single-photon time-dependent spectra in quantum optomechanics *(7 pages)* 043831
Imran M. Mirza and S. J. van Enk

Heisenberg treatment of pair generation in lossy coupled-cavity systems *(12 pages)* 043832
M. Kamandar Dezfouli, M. M. Dignam, M. J. Steel, and J. E. Sipe

Mode pairs in $\mathcal{PT}$-symmetric multimode waveguides *(6 pages)* 043833
Changming Huang, Fangwei Ye, and Xianfeng Chen

Faraday rotation and polarization-modulated intense femtosecond laser pulses in a field-ionizing gaseous medium *(11 pages)* 043834
C. X. Yu and J. Liu

Steady-state control in an unstable optomechanical system *(6 pages)* 043835
Nicolas L. Naumann, Sven M. Hein, Andreas Knorr, and Julia Kabuss

Impact of nonradiative line broadening on emission in photonic and plasmonic cavities *(6 pages)* 043836
Pavel Ginzburg, Alexey V. Krasavin, David Richards, and Anatoly V. Zayats

Cavity-output-field control via interference effects *(4 pages)* 043837
Viorel Ciornea and Mihai A. Macovei

Quantum dynamics of a two-level emitter with a modulated transition frequency *(8 pages)* 043838
Mihai Macovei and Christoph H. Keitel

Formation and manipulation of optomechanical chaos via a bichromatic driving *(6 pages)* 043839
Jinyong Ma, Cai You, Liu-Gang Si, Hao Xiong, Jiahua Li, Xiaoxue Yang, and Ying Wu

Dynamic stabilization of an optomechanical oscillator *(11 pages)* 043840
H. Seok, E. M. Wright, and P. Meystre

Continuous-variable cluster-state generation over the optical spatial mode comb *(7 pages)* 043841
Raphael Pooser and Jietai Jing

Manipulation of a two-photon state in a $\chi^{(2)}$-modulated nonlinear waveguide array *(6 pages)* 043842
Y. Yang, P. Xu, L. L. Lu, and S. N. Zhu

Optimization of the regime of shortening of relativistically strong laser pulses in the process of excitation of a plasma wake wave *(7 pages)* 043843
A. V. Kim, A. G. Litvak, V. A. Mironov, and S. A. Skobelev

(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 90, NUMBER 4** **OCTOBER 2014**

Converting one photon into two via four-wave mixing in optical fibers *(12 pages)* 043808
Audrey Dot, Evan Meyer-Scott, Raja Ahmad, Martin Rochette, and Thomas Jennewein

Systematic pathway to $\mathcal{PT}$-symmetry breaking in scattering systems *(5 pages)* 043809
P. A. Kalozoumis, G. Pappas, F. K. Diakonos, and P. Schmelcher

Generation of squeezed states in coupled cavity chains via dissipation of gap-tunable qubits *(8 pages)* 043810
Sheng-Li Ma, Zhen Li, Peng-Bo Li, and Fu-Li Li

Subcycle waveform generation by nonrecolliding tunneling electron wave packets *(4 pages)* 043811
E. E. Serebryannikov and A. M. Zheltikov

Invisible waveguides on metal plates for plasmonic analogs of electromagnetic wormholes *(12 pages)* 043812
Muamer Kadic, Guillaume Dupont, Stefan Enoch, and Sebastien Guenneau

Wavelength-separation-tunable two-color-soliton-pulse generation through prechirping *(6 pages)* 043813
Ping Qiu and Ke Wang

Macroscopic quantum effects for classical light *(11 pages)* 043814
N. I. Petrov

Light localization induced by a random imaginary refractive index *(7 pages)* 043815
A. Basiri, Y. Bromberg, A. Yamilov, H. Cao, and T. Kottos

Coupling-length phase matching for nonlinear optical frequency conversion in parallel waveguides *(11 pages)* . . . 043816
Ivan Biaggio, Virginie Coda, and Germano Montemezzani

Vacuum-induced symmetry breaking in a superconducting quantum circuit *(7 pages)* 043817
L. Garziano, R. Stassi, A. Ridolfo, O. Di Stefano, and S. Savasta

Quantum metrological bounds for vector parameters *(8 pages)* 043818
Yu-Ran Zhang and Heng Fan

Matched infrared soliton pairs in graphene under Landau quantization via four-wave mixing *(8 pages)* 043819
Chunling Ding, Rong Yu, Jiahua Li, Xiangying Hao, and Ying Wu

Parametric control in coupled fermionic oscillators *(9 pages)* 043820
Arnab Ghosh

Tunable photon statistics in weakly nonlinear photonic molecules *(7 pages)* 043822
Xun-Wei Xu and Yong Li

Quantum kinetics of ultracold fermions coupled to an optical resonator *(19 pages)* 043823
Francesco Piazza and Philipp Strack

Superradiant phase transition in an atom-cavity system combined with intracavity parametric down-conversion *(18 pages)* 043824
Deshui Yu and Sam Genway

Tunable double optomechanically induced transparency in an optomechanical system *(6 pages)* 043825
Peng-Cheng Ma, Jian-Qi Zhang, Yin Xiao, Mang Feng, and Zhi-Ming Zhang

Unpolarized states and hidden polarization *(6 pages)* 043826
P. de la Hoz, G. Björk, A. B. Klimov, G. Leuchs, and L. L. Sánchez-Soto

(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 90, NUMBER 4** **OCTOBER 2014**

Ring model for trapped condensates with synthetic spin-orbit coupling *(10 pages)* 043632
Xing Chen, Michael Rabinovic, Brandon M. Anderson, and Luis Santos

Second-order fluid dynamics for the unitary Fermi gas from kinetic theory *(9 pages)* 043633
Thomas Schäfer

Pairing correlations of cold fermionic gases at overflow from a narrow to a wide harmonic trap *(8 pages)* 043634
A. Pastore, P. Schuck, M. Urban, X. Viñas, and J. Margueron

Quantum phases of dipolar soft-core bosons *(5 pages)* 043635
D. Grimmer, A. Safavi-Naini, B. Capogrosso-Sansone, and Ş. G. Söyler

Three-body parameter for Efimov states in ^{6}Li *(9 pages)* 043636
Bo Huang (黄博), Kenneth M. O'Hara, Rudolf Grimm, Jeremy M. Hutson, and Dmitry S. Petrov

Directed motion of doublons and holes in periodically driven Mott insulators *(11 pages)* 043637
Maximilian Genske and Achim Rosch

Validating simple dynamical simulations of the unitary Fermi gas *(14 pages)* 043638
Michael McNeil Forbes and Rishi Sharma

Negative refraction of excitations in the Bose-Hubbard model *(5 pages)* 043639
R. A. Henry, J. Q. Quach, C.-H. Su, A. D. Greentree, and A. M. Martin

Measuring the heat capacity in a Bose-Einstein condensation using global variables *(5 pages)* 043640
R. F. Shiozaki, G. D. Telles, P. Castilho, F. J. Poveda-Cuevas, S. R. Muniz, G. Roati, V. Romero-Rochin, and V. S. Bagnato

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

Supersolid phases of light in extended Jaynes-Cummings-Hubbard systems *(7 pages)* 043801
B. Bujnowski, J. K. Corso, A. L. C. Hayward, J. H. Cole, and A. M. Martin

Reversible nonmagnetic single-photon isolation using unbalanced quantum coupling *(7 pages)* 043802
Keyu Xia (夏可宇), Guowei Lu, Gongwei Lin, Yuqing Cheng, Yueping Niu, Shangqing Gong, and Jason Twamley

Light storage via coherent population oscillation in a thermal cesium vapor *(6 pages)* 043803
A. J. F. de Almeida, J. Sales, M.-A. Maynard, T. Lauprêtre, F. Bretenaker, D. Felinto, F. Goldfarb, and J. W. R. Tabosa

Heralding efficiency and correlated-mode coupling of near-IR fiber-coupled photon pairs *(9 pages)* 043804
P. Ben Dixon, Danna Rosenberg, Veronika Stelmakh, Matthew E. Grein, Ryan S. Bennink, Eric A. Dauler, Andrew J. Kerman, Richard J. Molnar, and Franco N. C. Wong

Scalable quantum simulation of pulsed entanglement and Einstein-Podolsky-Rosen steering in optomechanics *(11 pages)* 043805
S. Kiesewetter, Q. Y. He, P. D. Drummond, and M. D. Reid

Lattice mapping for many-body open quantum systems and its application to atoms in photonic crystals *(12 pages)* 043806
Inés de Vega

Subcycle solitonic breathers *(8 pages)* 043807
A. A. Voronin and A. M. Zheltikov

(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 90, NUMBER 4** **OCTOBER 2014**

Decay of hydrodynamic modes in dilute Bose-Einstein condensates *(11 pages)* 043615
Erich D. Gust and L. E. Reichl

Two-dimensional Bose gas of tilted dipoles: Roton instability and condensate depletion *(7 pages)* 043616
A. K. Fedorov, I. L. Kurbakov, Y. E. Shchadilova, and Yu. E. Lozovik

Dynamics of correlations in a quasi-two-dimensional dipolar Bose gas following a quantum quench *(7 pages)* . . . 043617
Stefan S. Natu, L. Campanello, and S. Das Sarma

℘ Characterization of Bose-Hubbard models with quantum nondemolition measurements *(8 pages)* 043618
B. Rogers, M. Paternostro, J. F. Sherson, and G. De Chiara

Phase separation in a spin-orbit-coupled Bose-Einstein condensate *(9 pages)* 043619
Sandeep Gautam and S. K. Adhikari

Breaking the resilience of a two-dimensional Bose-Einstein condensate to fragmentation *(6 pages)* 043620
Shachar Klaiman, Axel U. J. Lode, Alexej I. Streltsov, Lorenz S. Cederbaum, and Ofir E. Alon

Collective excitations of a harmonically trapped, two-dimensional, spin-polarized dipolar Fermi gas in the hydrodynamic regime *(8 pages)* 043621
B. P. van Zyl, E. Zaremba, and J. Towers

Heteropairing and component-dependent pseudogap phenomena in an ultracold Fermi gas with different species with different masses *(11 pages)* 043622
Ryo Hanai and Yoji Ohashi

Single-particle versus pair superfluidity in a bilayer system of dipolar bosons *(5 pages)* 043623
A. Macia, G. E. Astrakharchik, F. Mazzanti, S. Giorgini, and J. Boronat

Flat-band ferromagnetism in the multilayer Lieb optical lattice *(10 pages)* 043624
Kazuto Noda, Kensuke Inaba, and Makoto Yamashita

Failure of the local generalized Gibbs ensemble for integrable models with bound states *(5 pages)* 043625
Garry Goldstein and Natan Andrei

Quench between a Mott insulator and a Lieb-Liniger liquid *(4 pages)* 043626
Garry Goldstein and Natan Andrei

Phase diffusion in a Bose-Einstein condensate of light *(5 pages)* 043627
A.-W. de Leeuw, E. C. I. van der Wurff, R. A. Duine, and H. T. C. Stoof

Quantum magnetism of ultracold atoms with a dynamical pseudospin degree of freedom *(13 pages)* 043628
Tobias Graß, Alessio Celi, and Maciej Lewenstein

Domain walls and bubble droplets in immiscible binary Bose gases *(10 pages)* 043629
G. Filatrella, Boris A. Malomed, and Mario Salerno

Resonant extended states in driven quasiperiodic lattices: Aubry-Andre localization by design *(5 pages)* 043630
L. Morales-Molina, E. Doerner, C. Danieli, and S. Flach

℘ Universal and nonuniversal effective N-body interactions for ultracold harmonically trapped few-atom systems *(6 pages)* 043631
X. Y. Yin, D. Blume, P. R. Johnson, and E. Tiesinga

(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 90, NUMBER 4 OCTOBER 2014

Tunneling site of electrons in strong-field-enhanced ionization of molecules *(6 pages)* 043420
Cheng Huang, Pengfei Lan, Yueming Zhou, Qingbin Zhang, Kunlong Liu, and Peixiang Lu

Effects of ultrashort laser-pulse durations on Fano resonances in atomic spectra *(4 pages)* 043421
F. B. Rosmej, V. A. Astapenko, and V. S. Lisitsa

PART B

Matter waves and collective properties of cold atoms and molecules

Theory of two-particle emission from superfluid Fermi gases in the BCS-BEC crossover *(12 pages)* 043601
Emiko Arahata and Tetsuro Nikuni

Polaron formation in the vicinity of a narrow Feshbach resonance *(9 pages)* 043602
W. Casteels and M. Wouters

Dynamical robustness of the conductivity of ultracold bosons confined in layered structures *(10 pages)* 043603
A. S. Sajna and T. P. Polak

Quantum phases of hard-core dipolar bosons in coupled one-dimensional optical lattices *(13 pages)* 043604
A. Safavi-Naini, B. Capogrosso-Sansone, and A. Kuklov

Dynamics of localized waves in one-dimensional random potentials: Statistical theory of the coherent forward scattering peak *(14 pages)* 043605
Kean Loon Lee (李健伦), Benoît Grémaud, and Christian Miniatura

Bound states and expansion dynamics of interacting bosons on a one-dimensional lattice *(11 pages)* 043606
Cristian Degli Esposti Boschi, Elisa Ercolessi, Loris Ferrari, Piero Naldesi, Fabio Ortolani, and Luca Taddia

Dipolar atomic spin ensembles in a double-well potential *(8 pages)* 043607
A. de Paz, B. Naylor, J. Huckans, A. Carrance, O. Gorceix, E. Maréchal, P. Pedri, B. Laburthe-Tolra, and L. Vernac

Chandrasekhar-Clogston limit and critical polarization in a Fermi-Bose superfluid mixture *(5 pages)* 043608
Tomoki Ozawa, Alessio Recati, Marion Delehaye, Frédéric Chevy, and Sandro Stringari

Thermodynamics of a spin-1 Bose gas with fixed magnetization *(11 pages)* 043609
Guillaume Lang and Emilia Witkowska

Dynamics in asymmetric double-well condensates *(11 pages)* 043610
H. M. Cataldo and D. M. Jezek

Matter-wave Fourier optics with a strongly interacting two-dimensional Fermi gas *(6 pages)* 043611
P. A. Murthy, D. Kedar, T. Lompe, M. Neidig, M. G. Ries, A. N. Wenz, G. Zürn, and S. Jochim

Pressure-driven evaporative cooling in atom guides *(4 pages)* 043612
Spencer E. Olson, Georg Raithel, and Andrew J. Christlieb

Stroboscopic versus nonstroboscopic dynamics in the Floquet realization of the Harper-Hofstadter Hamiltonian *(9 pages)* 043613
Marin Bukov and Anatoli Polkovnikov

Polarization of a quasi-two-dimensional repulsive Fermi gas with Rashba spin-orbit coupling: A variational study *(6 pages)* 043614
A. Ambrosetti, G. Lombardi, L. Salasnich, P. L. Silvestrelli, and F. Toigo

(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 90, NUMBER 4** **OCTOBER 2014**

Subcycle transient structures in time-dependent multiphoton-ionization rates *(5 pages)* 043404
Dmitry A. Telnov, K. Nasiri Avanaki, and Shih-I Chu

Angular correlation of a pair of Lyman-α photons produced in the photodissociation of H_2 *(9 pages)* 043405
Yuko Nakanishi, Kouichi Hosaka, Ryoko Kougo, Takeshi Odagiri, Motoyoshi Nakano, Yoshiaki Kumagai, Kennichi Shiino, Masashi Kitajima, and Noriyuki Kouchi

Interpreting electron-momentum distributions and nonadiabaticity in strong-field ionization *(8 pages)* 043406
C. Hofmann, A. S. Landsman, A. Zielinski, C. Cirelli, T. Zimmermann, A. Scrinzi, and U. Keller

Dynamic discrimination of oriented molecules controlled with the nonresonant dynamic Stark effect induced by a single-cycle THz pulse *(9 pages)* 043407
Yuzuru Kurosaki, Hiroshi Akagi, and Keiichi Yokoyama

Efficient all-optical production of large ^{6}Li quantum gases using D_1 gray-molasses cooling *(5 pages)* 043408
A. Burchianti, G. Valtolina, J. A. Seman, E. Pace, M. De Pas, M. Inguscio, M. Zaccanti, and G. Roati

Ground-state cooling of a trapped ion by quantum interference pathways *(7 pages)* 043409
Shuo Zhang, Jian-Qi Zhang, Qian-Heng Duan, Chu Guo, Chun-Wang Wu, Wei Wu, and Ping-Xing Chen

Empirical formula for over-barrier strong-field ionization *(7 pages)* 043410
Qingbin Zhang, Pengfei Lan, and Peixiang Lu

Effect of nuclear motion on high-order-harmonic generation of H_2^+ in intense ultrashort laser pulses *(7 pages)* . . . 043411
H. Ahmadi, A. Maghari, H. Sabzyan, A. R. Niknam, and M. Vafaee

Resistive and sympathetic cooling of highly-charged-ion clouds in a Penning trap *(10 pages)* 043412
M. Vogel, H. Häffner, K. Hermanspahn, S. Stahl, J. Steinmann, and W. Quint

Jaynes-Cummings dynamics in mesoscopic ensembles of Rydberg-blockaded atoms *(8 pages)* 043413
I. I. Beterov, T. Andrijauskas, D. B. Tretyakov, V. M. Entin, E. A. Yakshina, I. I. Ryabtsev, and S. Bergamini

Robustness of controlled quantum dynamics *(14 pages)* 043414
Andy Koswara and Raj Chakrabarti

Ejection of innershell electrons induced by recollision in a laser-driven carbon atom *(10 pages)* 043415
Erik Lötstedt and Katsumi Midorikawa

Alignment and pulse-duration effects in two-photon double ionization of H_2 by femtosecond XUV laser pulses *(8 pages)* 043416
Xiaoxu Guan, Klaus Bartschat, Barry I. Schneider, and Lars Koesterke

Circular dichroism in molecular-frame photoelectron angular distributions in the dissociative photoionization of H_2 and D_2 molecules *(12 pages)* 043417
J. F. Pérez-Torres, J. L. Sanz-Vicario, K. Veyrinas, P. Billaud, Y. J. Picard, C. Elkharrat, S. Marggi Poullain, N. Saquet, M. Lebech, J. C. Houver, F. Martín, and D. Dowek

Harmonic generation by noble-gas atoms in the near-IR regime using *ab initio* time-dependent R-matrix theory *(5 pages)* 043418
O. Hassouneh, A. C. Brown, and H. W. van der Hart

Two-photon microwave transitions and strong-field effects in a room-temperature Rydberg-atom gas *(6 pages)* . . . 043419
D. A. Anderson, A. Schwarzkopf, S. A. Miller, N. Thaicharoen, G. Raithel, J. A. Gordon, and C. L. Holloway

(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 90, NUMBER 4** **OCTOBER 2014**

Atomic and molecular collisions and interactions

Ionization-excitation of helium by high-resolution (e, $2e$) spectroscopy and 4-body distorted-wave calculations *(6 pages)* 042701
X. L. Chen, A. L. Harris, J. M. Li, T. P. Esposito, J. K. Deng, and C. G. Ning

Central-field model for the γ spectrum of positrons annihilating on rare-gas atoms *(12 pages)* 042702
Yongjun Cheng and J. Mitroy

Threshold effects in positron scattering from isoelectronic series of atoms and molecules *(5 pages)* 042703
J. R. Machacek, S. J. Buckman, and J. P. Sullivan

Electron-impact dissociative ionization of the molecular ion HDO^+: A global view *(6 pages)* 042704
P. Defrance, J. Jureta, J. Lecointre, E. Giglio, B. Gervais, C. Dal Cappello, M. Ruiz-Lopez, I. Charpentier, and P.-A. Hervieux

Quantum-defect model of a reactive collision at finite temperature *(10 pages)* 042705
Krzysztof Jachymski, Michał Krych, Paul S. Julienne, and Zbigniew Idziaszek

Influence of the excitation threshold of d electrons on electronic stopping of slow light ions *(9 pages)* 042706
D. Goebl, W. Roessler, D. Roth, and P. Bauer

Adiabatic hyperspherical representation for the three-body problem in two dimensions *(13 pages)* 042707
J. P. D'Incao and B. D. Esry

H_2-assisted ternary recombination of H_3^+ with electrons at 300 K *(6 pages)* 042708
Petr Dohnal, Peter Rubovič, Ábel Kálosi, Michal Hejduk, Radek Plašil, Rainer Johnsen, and Juraj Glosík

Relativistic calculations of x-ray emission following a Xe-Bi^{83+} collision *(7 pages)* 042709
Y. S. Kozhedub, V. M. Shabaev, I. I. Tupitsyn, A. Gumberidze, S. Hagmann, G. Plunien, and Th. Stöhlker

Observing dipolar confinement-induced resonances in quasi-one-dimensional atomic gases *(8 pages)* 042710
Tao Shi and Su Yi

Theoretical analysis of Young-type electron interference in $He^{2+} + H_2$ collisions using a semiclassical model *(6 pages)* 042711
G. Oliviéro, V. Pestel, L. Bottey, M. Philippe, and F. Frémont

Ion-momentum imaging of dissociative-electron-attachment dynamics in acetylene *(5 pages)* 042712
M. Fogle, D. J. Haxton, A. L. Landers, A. E. Orel, and T. N. Rescigno

Electron-loss-to-continuum cusp in $U^{88+} + N_2$ collisions *(10 pages)* 042713
P.-M. Hillenbrand, S. Hagmann, A. B. Voitkiv, B. Najjari, D. Banaś, K.-H. Blumenhagen, C. Brandau, W. Chen, E. De Filippo, A. Gumberidze, D. L. Guo, C. Kozhuharov, M. Lestinsky, Yu. A. Litvinov, A. Müller, H. Rothard, S. Schippers, M. S. Schöffler, U. Spillmann, S. Trotsenko, X. L. Zhu, and Th. Stöhlker

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

Displacement effect in strong-field atomic ionization by an XUV pulse *(5 pages)* 043401
Igor A. Ivanov, Anatoli S. Kheifets, Klaus Bartschat, John Emmons, Sean M. Buczek, Elena V. Gryzlova, and Alexei N. Grum-Grzhimailo

Surface-electrode decelerator and deflector for Rydberg atoms and molecules *(7 pages)* 043403
P. Allmendinger, J. Deiglmayr, J. A. Agner, H. Schmutz, and F. Merkt

(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 90, NUMBER 4 OCTOBER 2014

℘ Device-independent tomography of multipartite quantum states *(9 pages)* 042340
Károly F. Pál, Tamás Vértesi, and Miguel Navascués

Atomic and molecular structure and dynamics

Exact and approximate Kohn-Sham potentials in ensemble density-functional theory *(8 pages)* 042501
Zeng-hui Yang, John R. Trail, Aurora Pribram-Jones, Kieron Burke, Richard J. Needs, and Carsten A. Ullrich

Positronium energy levels at order $m\alpha^7$: Light-by-light scattering in the two-photon-annihilation channel *(8 pages)* 042502
Gregory S. Adkins, Christian Parsons, M. D. Salinger, Ruihan Wang, and Richard N. Fell

Core-polarization studies of nuclear-Schiff-moment-induced permanent electric dipole moments of atomic ^{129}Xe, ^{171}Yb, and ^{225}Ra *(5 pages)* 042503
S. M. Ramachandran and K. V. P. Latha

Coupling of N_2^+ rotational states in an air laser from tunnel-ionized nitrogen molecules *(5 pages)* 042504
Hongqiang Xie, Bin Zeng, Guihua Li, Wei Chu, Haisu Zhang, Chenrui Jing, Jinping Yao, Jielei Ni, Zhaohui Wang, Ziting Li, and Ya Cheng

Optical atomic clocks with suppressed blackbody-radiation shift *(6 pages)* 042505
A. Kozlov, V. A. Dzuba, and V. V. Flambaum

℘ Absorption-line-shape recovery beyond the detection-bandwidth limit: Application to the precision spectroscopic measurement of the Boltzmann constant *(12 pages)* 042506
F. Rohart, S. Mejri, P. L. T. Sow, S. K. Tokunaga, C. Chardonnet, B. Darquié, H. Dinesan, E. Fasci, A. Castrillo, L. Gianfrani, and C. Daussy

Beyond the Born-Oppenheimer approximation with quantum Monte Carlo methods *(5 pages)* 042507
Norm M. Tubman, Ilkka Kylänpää, Sharon Hammes-Schiffer, and David M. Ceperley

Experimental investigation of the interatomic Coulombic decay in NeAr dimers *(6 pages)* 042508
P. O'Keeffe, A. Ciavardini, E. Ripani, P. Bolognesi, M. Coreno, L. Avaldi, M. Devetta, M. Di Fraia, C. Callegari, K. C. Prince, and R. Richter

Spin-exchange narrowing of the atomic ground-state resonances *(5 pages)* 042509
W. Chalupczak, P. Josephs-Franks, B. Patton, and S. Pustelny

Anisotropy enhancement of the Casimir-Polder force between a nanoparticle and graphene *(8 pages)* 042510
S.-A. Biehs and G. S. Agarwal

Relativistic global and local divergences in hydrogenic systems: A study in position and momentum spaces *(14 pages)* 042511
J. Antolín, J. C. Angulo, S. Mulas, and S. López-Rosa

Coefficients of sensitivity to α variation for astrophysically relevant transitions in Ni II *(5 pages)* 042512
E. A. Konovalova, M. G. Kozlov, and R. T. Imanbaeva

Highly charged Ag-like and In-like ions for the development of atomic clocks and the search for α variation *(11 pages)* 042513
M. S. Safronova, V. A. Dzuba, V. V. Flambaum, U. I. Safronova, S. G. Porsev, and M. G. Kozlov

Calculation of fine-structure splittings in high-lying ^2F states of rubidium *(12 pages)* 042514
S. A. Blundell

(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 90, NUMBER 4** **OCTOBER 2014**

Deterministic generation of entanglement between a quantum-dot spin and a photon *(6 pages)* 042322
Shuo Sun and Edo Waks

Hybrid entanglement in a triple-quantum-dot shuttle device *(6 pages)* 042323
J. Mora, E. Cota, and F. Rojas

Generation of entanglement in systems of intercoupled qubits *(8 pages)* 042324
Levon Chakhmakhchyan, Claude Leroy, Nerses Ananikian, and Stéphane Guérin

Reverse-reconciliation continuous-variable quantum key distribution based on the uncertainty principle *(12 pages)* 042325
Fabian Furrer

Parafermion stabilizer codes *(7 pages)* 042326
Utkan Güngördü, Rabindra Nepal, and Alexey A. Kovalev

Counterfactual distributed controlled-phase gate for quantum-dot spin qubits in double-sided optical microcavities *(8 pages)* 042327
Qi Guo, Liu-Yong Cheng, Li Chen, Hong-Fu Wang, and Shou Zhang

Detection of multipartite entanglement in spin rings by use of exchange energy *(7 pages)* 042328
I. Siloi and F. Troiani

High-bit-rate continuous-variable quantum key distribution *(8 pages)* 042329
Paul Jouguet, David Elkouss, and Sébastien Kunz-Jacques

Sudden change in dynamics of genuine multipartite entanglement of cavity-reservoir qubits *(8 pages)* 042330
Mazhar Ali and A. R. P. Rau

Characteristics of universal embezzling families *(8 pages)* 042331
Debbie Leung and Bingjie Wang

Noisy quantum teleportation: An experimental study on the influence of local environments *(8 pages)* 042332
Laura T. Knoll, Christian T. Schmiegelow, and Miguel A. Larotonda

Hybrid valence-bond states for universal quantum computation *(6 pages)* 042333
Tzu-Chieh Wei, Poya Haghnegahdar, and Robert Raussendorf

Measurement-device-independent quantum key distribution with a passive decoy-state method *(9 pages)* 042334
Yu-Zhu Shan, Shi-Hai Sun, Xiang-Chun Ma, Mu-Sheng Jiang, Yan-Li Zhou, and Lin-Mei Liang

℘ Quantum communication with coherent states and linear optics *(10 pages)* 042335
Juan Miguel Arrazola and Norbert Lütkenhaus

Reliable experimental quantification of bipartite entanglement without reference frames *(7 pages)* 042336
Thomas Lawson, Anna Pappa, Boris Bourdoncle, Iordanis Kerenidis, Damian Markham, and Eleni Diamanti

Quantum teleportation in space and frequency using entangled pairs of photons from a frequency comb *(10 pages)* 042337
Hongbin Song, Hidehiro Yonezawa, Katanya B. Kuntz, Michele Heurs, and Elanor H. Huntington

Maxwell's demons in multipartite quantum correlated systems *(7 pages)* 042338
Helena C. Braga, Clodoaldo C. Rulli, Thiago R. de Oliveira, and Marcelo S. Sarandy

℘ Robust self-testing of the three-qubit W state *(10 pages)* 042339
Xingyao Wu, Yu Cai, Tzyh Haur Yang, Huy Nguyen Le, Jean-Daniel Bancal, and Valerio Scarani

(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 90, NUMBER 4** **OCTOBER 2014**

Optimal quench for distance-independent entanglement and maximal block entropy *(8 pages)* 042304
Bedoor Alkurtass, Leonardo Banchi, and Sougato Bose

Quantum simulation of the Schwinger model: A study of feasibility *(9 pages)* 042305
Stefan Kühn, J. Ignacio Cirac, and Mari-Carmen Bañuls

Room-temperature storage of electromagnetic pulses on a high-finesse natural spin-frequency comb *(6 pages)* . . . 042306
K. I. Gerasimov, S. A. Moiseev, V. I. Morosov, and R. B. Zaripov

Dynamical-decoupling noise spectroscopy at an optimal working point of a qubit *(12 pages)* 042307
Łukasz Cywiński

Entanglement of π–locally-maximally-entangleable states and the satisfiability problem *(7 pages)* 042308
Adi Makmal, Markus Tiersch, Vedran Dunjko, and Shengjun Wu

Gaussian states and geometrically uniform symmetry *(9 pages)* 042309
Gianfranco Cariolaro, Roberto Corvaja, and Gianfranco Pierobon

Optimizing passive quantum clocks *(10 pages)* 042310
Michael Mullan and Emanuel Knill

Device-independent quantum cryptography for continuous variables *(7 pages)* 042311
Kevin Marshall and Christian Weedbrook

Classical capacity of Gaussian thermal memory channels *(12 pages)* 042312
G. De Palma, A. Mari, and V. Giovannetti

Robustness of optimal transport in one-dimensional particle quantum networks *(7 pages)* 042313
C. Javaherian and J. Twamley

Role of correlations in the two-body-marginal problem *(9 pages)* 042314
Lin Chen, Oleg Gittsovich, K. Modi, and Marco Piani

Fidelity threshold of the surface code beyond single-qubit error models *(11 pages)* 042315
Pejman Jouzdani, E. Novais, I. S. Tupitsyn, and Eduardo R. Mucciolo

Quantum gates with phase stability over space and time *(8 pages)* 042316
I. V. Inlek, G. Vittorini, D. Hucul, C. Crocker, and C. Monroe

Quantum and classical dynamics in adiabatic computation *(10 pages)* 042317
P. J. D. Crowley, T. Đurić, W. Vinci, P. A. Warburton, and A. G. Green

Generalized conditional entropy optimization for qudit-qubit states *(10 pages)* 042318
N. Gigena and R. Rossignoli

Certifying quantumness: Benchmarks for the optimal processing of generalized coherent and squeezed states *(20 pages)* 042319
Yuxiang Yang, Giulio Chiribella, and Gerardo Adesso

Entanglement detection via continuous quantum channels *(5 pages)* 042320
D. Duran, A. Verçin, and S. Yılmaz

Theorem on the existence of a nonzero energy gap in adiabatic quantum computation *(5 pages)* 042321
Da-Jian Zhang, Xiao-Dong Yu, and D. M. Tong

(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 90, NUMBER 4** **OCTOBER 2014**

Quantum phase transitions in the noncommutative Dirac oscillator *(11 pages)* 042111
O. Panella and P. Roy

Adiabatic-Markovian bath dynamics at avoided crossings *(5 pages)* 042112
P. Nalbach

Improved error-tradeoff and error-disturbance relations in terms of measurement error components *(7 pages)* 042113
Xiao-Ming Lu, Sixia Yu, Kazuo Fujikawa, and C. H. Oh

Testing macroscopic realism through high-mass interferometry *(5 pages)* 042114
Clive Emary, J. P. Cotter, and Markus Arndt

Cloning in nonlinear Hamiltonian quantum and hybrid mechanics *(7 pages)* 042115
D. Arsenović, N. Burić, D. B. Popović, M. Radonjić, and S. Prvanović

Non-Abelian geometric phase in the diamond nitrogen-vacancy center *(5 pages)* 042116
Mark A. Kowarsky, Lloyd C. L. Hollenberg, and Andrew M. Martin

Pauli equation for a charged spin particle on a curved surface in an electric and magnetic field *(7 pages)* 042117
Yong-Long Wang, Long Du, Chang-Tan Xu, Xiao-Jun Liu, and Hong-Shi Zong

Room-temperature ultrasensitive mass spectrometer via dynamical decoupling *(6 pages)* 042118
Nan Zhao and Zhang-qi Yin

Continuous-variable phase estimation with unitary and random linear disturbance *(7 pages)* 042119
Douglas Delgado de Souza, Marco G. Genoni, and M. S. Kim

Mirror-induced decoherence in hybrid quantum-classical theory *(7 pages)* 042120
Aniello Lampo, Lorenzo Fratino, and Hans-Thomas Elze

Nonlocal polarization interferometer for entanglement detection *(8 pages)* 042121
Brian P. Williams, Travis S. Humble, and Warren P. Grice

Clustering and decoherence of correlated spins under double quantum dynamics *(8 pages)* 042122
Claudia M. Sánchez, Rodolfo H. Acosta, Patricia R. Levstein, Horacio M. Pastawski, and Ana K. Chattah

Coupling approach for the realization of a $\mathcal{PT}$-symmetric potential for a Bose-Einstein condensate in a double well *(8 pages)* 042123
Fabian Single, Holger Cartarius, Günter Wunner, and Jörg Main

Time-dependent Bell inequalities in a Wigner form *(9 pages)* 042124
N. Nikitin, V. Sotnikov, and K. Toms

Quantum information

Toward high-dimensional-state quantum memory in a cold atomic ensemble *(5 pages)* 042301
Dong-Sheng Ding, Wei Zhang, Zhi-Yuan Zhou, Shuai Shi, Jian-song Pan, Guo-Yong Xiang, Xi-Shi Wang, Yun-Kun Jiang, Bao-Sen Shi, and Guang-Can Guo

Demonstrating elements of measurement-based quantum error correction *(10 pages)* 042302
Stefanie Barz, Rui Vasconcelos, Chiara Greganti, Michael Zwerger, Wolfgang Dür, Hans J. Briegel, and Philip Walther

Magnon qubit and quantum computing on magnon Bose-Einstein condensates *(7 pages)* 042303
S. N. Andrianov and S. A. Moiseev

(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 90, NUMBER 4 OCTOBER 2014

Controlling the interactions of a few cold Rb Rydberg atoms by radio-frequency-assisted Förster resonances *(5 pages)* . . . . . 041403(R)
D. B. Tretyakov, V. M. Entin, E. A. Yakshina, I. I. Beterov, C. Andreeva, and I. I. Ryabtsev

Matter waves and collective properties of cold atoms and molecules

Direct probe of topological order for cold atoms *(5 pages)* . . . . . 041601(R)
Dong-Ling Deng, Sheng-Tao Wang, and L.-M. Duan

Dynamically decoupled three-body interactions with applications to interaction-based quantum metrology *(5 pages)* . . . . . 041602(R)
K. W. Mahmud, E. Tiesinga, and P. R. Johnson

Atom-dimer scattering and stability of Bose and Fermi mixtures *(5 pages)* . . . . . 041603(R)
Xiaoling Cui

Approach for making visible and stable stripes in a spin-orbit-coupled Bose-Einstein superfluid *(5 pages)* . . . . . 041604(R)
Giovanni I. Martone, Yun Li, and Sandro Stringari

ARTICLES

Fundamental concepts

Measuring non-Markovianity based on local quantum uncertainty *(7 pages)* 042101
Zhi He, Chunmei Yao, Qiong Wang, and Jian Zou

Quantum mechanics without state vectors *(11 pages)* 042102
Steven Weinberg

Finite-temperature reservoir engineering and entanglement dynamics *(9 pages)* 042103
S. Fedortchenko, A. Keller, T. Coudreau, and P. Milman

Utilizing nitrogen-vacancy centers to measure oscillating magnetic fields *(12 pages)* 042104
Adam Zaman Chaudhry

Time-multiplexed measurements of nonclassical light at telecom wavelengths *(6 pages)* 042105
G. Harder, C. Silberhorn, J. Rehacek, Z. Hradil, L. Motka, B. Stoklasa, and L. L. Sánchez-Soto

Maximal incompatibility of locally classical behavior and global causal order in multiparty scenarios *(7 pages)* 042106
Ämin Baumeler, Adrien Feix, and Stefan Wolf

Treating time travel quantum mechanically *(17 pages)* 042107
John-Mark A. Allen

Crossover between non-Markovian and Markovian dynamics induced by a hierarchical environment *(6 pages)* . . . 042108
Tiantian Ma, Yusui Chen, Tian Chen, Samuel R. Hedemann, and Ting Yu

On-chip interaction-free measurements via the quantum Zeno effect *(8 pages)* 042109
Xiao-song Ma, Xiang Guo, Carsten Schuck, King Y. Fong, Liang Jiang, and Hong X. Tang

Time-driven quantum master equations and their compatibility with the fluctuation dissipation theorem *(10 pages)* 042110
Jérôme Flakowski, Maksym Osmanov, David Taj, and Hans Christian Öttinger

(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 90, NUMBER 4 *CONTENTS* **OCTOBER 2014**
PARTS A AND B

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 040001–043421, and Part B pages 043601–049903(E).

PART A

EDITORIALS AND ANNOUNCEMENTS

Editorial: PRX Takes on a New Role *(2 pages)* 040001

RAPID COMMUNICATIONS

Fundamental concepts

$\mathcal{PT}$ spectroscopy of the Rabi problem *(4 pages)* . . . . . 040101(R)
Yogesh N. Joglekar, Rahul Marathe, P. Durganandini, and Rajeev K. Pathak

Quantum information

Transformed composite sequences for improved qubit addressing *(4 pages)* . . . . . 040301(R)
J. True Merrill, S. Charles Doret, Grahame Vittorini, J. P. Addison, and Kenneth R. Brown

Entanglement of distinguishable quantum memories *(5 pages)* . . . . . 040302(R)
G. Vittorini, D. Hucul, I. V. Inlek, C. Crocker, and C. Monroe

Atomic and molecular structure and dynamics

Absolute frequency measurement of the $7s^2\ {}^1S_0$–$7s7p\ {}^1P_1$ transition in ^{225}Ra *(5 pages)* . . . . . 040501(R)
B. Santra, U. Dammalapati, A. Groot, K. Jungmann, and L. Willmann

Long coherence times for Rydberg qubits on a superconducting atom chip *(5 pages)* . . . . . 040502(R)
C. Hermann-Avigliano, R. Celistrino Teixeira, T. L. Nguyen, T. Cantat-Moltrecht, G. Nogues, I. Dotsenko, S. Gleyzes, J. M. Raimond, S. Haroche, and M. Brune

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

Role of laser-driven electron-multirescattering in resonance-enhanced below-threshold harmonic generation in He atoms *(5 pages)* . . . . . 041401(R)
Peng-Cheng Li, Yae-Lin Sheu, Cecil Laughlin, and Shih-I Chu

Selecting rotational two-level coherence in polar molecules by double terahertz pulses *(5 pages)* . . . . . 041402(R)
Kenta Kitano, Nobuhisa Ishii, Teruto Kanai, and Jiro Itatani

Copyright 2014 by American Physical Society

(Continued)

1050-2947(201410)90:4:B;1-T

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).