

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 95, NUMBER 5

MAY 2017

Publisher's Note: Optomechanical systems close to the conservative limit [Phys. Rev. A 95 , 013831 (2017)] (<i>1 page</i>)	059906(E)
D. Platou Foulla, P. Djorwé, S. Takougang Kingni, and S. G. Nana Engo	
Publisher's Note: Dielectrophoresis-assisted plasmonic trapping of dielectric nanoparticles [Phys. Rev. A 95 , 023840 (2017)] (<i>1 page</i>)	059907(E)
Mohammad Asif Zaman, Punag Padhy, Paul C. Hansen, and Lambertus Hesselink	
Erratum: Cramér-Rao bound for time-continuous measurements in linear Gaussian quantum systems [Phys. Rev. A 95 , 012116 (2017)] (<i>2 pages</i>)	059908(E)
Marco G. Genoni	
Erratum: High-harmonic generation from hydrogen atoms driven by two-color mutually orthogonal laser fields [Phys. Rev. A 88 , 063419 (2013)] (<i>1 page</i>)	059909(E)
Mitsuko Murakami, Oleg Korobkin, and Marko Horbatsch	
Erratum: Spatial optical solitons in highly nonlocal media [Phys. Rev. A 91 , 013841 (2015)] (<i>1 page</i>)	059910(E)
Alessandro Alberucci, Chandroth P. Jisha, Noel F. Smyth, and Gaetano Assanto	

CONTENTS - *Continued*

PHYSICAL REVIEW A	THIRD SERIES, VOLUME 95, NUMBER 5	MAY 2017
Refractive-index measurement of Si at γ -ray energies up to 2 MeV (8 pages)		053864
M. M. Günther, M. Jentschel, A. J. Pollitt, P. G. Thirolf, and M. Zepf		
Population of collective modes in light scattering by many atoms (9 pages)		053865
William Guerin and Robin Kaiser		
Topological edge states of bound photon pairs (12 pages)		053866
Maxim A. Gorlach and Alexander N. Poddubny		
 Absorption and photoluminescence in organic cavity QED (24 pages)		053867
Felipe Herrera and Frank C. Spano		
$\mathcal{PT}$ -symmetric waveguide system with evidence of a third-order exceptional point (8 pages)		053868
Jan Schnabel, Holger Cartarius, Jörg Main, Günter Wunner, and Walter Dieter Heiss		
Effects of detuning, gain-guiding, and index antiguiding on the dynamics of two laterally coupled semiconductor lasers (15 pages)		053869
M. J. Adams, Nianqiang Li, B. R. Cerny, H. Susanto, and I. D. Henning		
Quantum optomechanical straight-twin engine (7 pages)		053870
Keye Zhang and Weiping Zhang		

COMMENTS

Comment on “Unification of multiqubit polygamy inequalities” (3 pages)	056301
Wei Song, Jun-Long Zhao, Long-Bao Yu, and Li-Hua Zhang	
Comment on “Spatial optical solitons in highly nonlocal media” (2 pages)	057801
Milan S. Petrović, Najdan B. Aleksić, Branislav N. Aleksić, Aleksandra I. Strinić, and Milivoj R. Belić	
Reply to “Comment on ‘Spatial optical solitons in highly nonlocal media’” (5 pages)	057802
Alessandro Alberucci, Chandroth P. Jisha, Noel F. Smyth, and Gaetano Assanto	

ERRATA

Erratum: High-precision measurements of the ^{87}Rb D -line tune-out wavelength [Phys. Rev. A 92 , 052501 (2015)] (1 page)	059901(E)
R. H. Leonard, A. J. Fallon, C. A. Sackett, and M. S. Safronova	
Publisher’s Note: Continuous measurement of an atomic current [Phys. Rev. A 95 , 043843 (2017)] (1 page)	059902(E)
C. Laflamme, D. Yang, and P. Zoller	
Publisher’s Note: Dynamical realization of magnetic states in a strongly interacting Bose mixture [Phys. Rev. A 95 , 023612 (2017)] (1 page)	059903(E)
R. E. Barfknecht, A. Foerster, and N. T. Zinner	
Erratum: Analytic form of the correlation energy of the uniform electron gas [Phys. Rev. A 79 , 014103 (2009)] (1 page)	059904(E)
Emil Proynov and Jing Kong	
Publisher’s Note: Role of adiabaticity in controlling alkali-metal fine-structure mixing induced by rare gases [Phys. Rev. A 95 , 042708 (2017)] (1 page)	059905(E)
Ben Eshel, Joseph A. Cardoza, David E. Weeks, and Glen P. Perram	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A	THIRD SERIES, VOLUME 95, NUMBER 5	MAY 2017
Guided modes in the plane array of optical waveguides (6 pages)		053847
I. Ya. Polishchuk, A. A. Anastasiev, E. A. Tsyvkunova, M. I. Gozman, S. V. Solov'ov, and Yu. I. Polishchuk		
Resonant-state expansion of light propagation in nonuniform waveguides (11 pages)		053848
S. V. Lobanov, G. Zorinians, W. Langbein, and E. A. Muljarov		
Observation of spatial quantum correlations in the macroscopic regime (6 pages)		053849
Ashok Kumar, Hayden Nunley, and A. M. Marino		
Deep-subwavelength lithography via graphene plasmons (6 pages)		053850
Xiaodong Zeng, Longfei Fan, and M. Suhail Zubairy		
Indistinguishability-induced classical-to-nonclassical transition of photon statistics (5 pages)		053851
Ao Shen, Bo Du, Ze-Hao Wang, Yang Dong, Xiang-Dong Chen, Guang-Can Guo, and Fang-Wen Sun		
Quasiparticles in an interacting system of charge and monochromatic field (11 pages)		053852
P. Mati		
Off-resonance coupling between a cavity mode and an ensemble of driven spins (8 pages)		053853
Hui Wang, Sergei Masis, Roei Levi, Oleg Shtempluk, and Eyal Buks		
Superradiant phase transition in the ultrastrong-coupling regime of the two-photon Dicke model (10 pages)		053854
L. Garbe, I. L. Egusquiza, E. Solano, C. Ciuti, T. Coudreau, P. Milman, and S. Felicetti		
Measuring the dispersive frequency shift of a rectangular microwave cavity induced by an ensemble of Rydberg atoms (11 pages)		053855
M. Stammeier, S. Garcia, T. Thiele, J. Deiglmayr, J. A. Agner, H. Schmutz, F. Merkt, and A. Wallraff		
Structure of polarimetric purity of three-dimensional polarization states (10 pages)		053856
José J. Gil, Ari T. Friberg, Tero Setälä, and Ignacio San José		
Power drainage and energy dissipation in lossy but perfect lenses (7 pages)		053857
Gilad Rosenblatt and Meir Orenstein		
Synchronization of an optomechanical system to an external drive (9 pages)		053858
Ehud Amitai, Niels Lörch, Andreas Nunnenkamp, Stefan Walter, and Christoph Bruder		
Erasing the orbital angular momentum information of a photon (6 pages)		053859
Isaac Nape, Bienvenu Ndagano, and Andrew Forbes		
Measuring the polarization of electromagnetic fields using Rabi-rate measurements with spatial resolution: Experiment and theory (9 pages)		053860
J. Koepsell, T. Thiele, J. Deiglmayr, A. Wallraff, and F. Merkt		
Nonlinear effects in modulated quantum optomechanics (7 pages)		053861
Tai-Shuang Yin, Xin-You Lü, Li-Li Zheng, Mei Wang, Sha Li, and Ying Wu		
Perfect absorption and no reflection in disordered photonic crystals (9 pages)		053862
Jin-Hui Wu, M. Artoni, and G. C. La Rocca		
Coexistence of stable dark- and bright-soliton Kerr combs in normal-dispersion resonators (8 pages)		053863
P. Parra-Rivas, D. Gomila, and L. Gelens		

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 95, NUMBER 5

MAY 2017

Unified theory to describe and engineer conservation laws in light-matter interactions (<i>13 pages</i>)	053829
Ivan Fernandez-Corbaton and Carsten Rockstuhl	
Self-collimation in $\mathcal{PT}$ -symmetric crystals (<i>6 pages</i>)	053830
W. W. Ahmed, R. Herrero, M. Botey, and K. Staliunas	
Extinction of light and coherent scattering by a single nitrogen-vacancy center in diamond (<i>10 pages</i>)	053831
Thai Hien Tran, Petr Siyushev, Jörg Wrachtrup, and Ilja Gerhardt	
Superradiance phase transition in the presence of parameter fluctuations (<i>7 pages</i>)	053833
S. Ashhab and K. Semba	
Singular-value decomposition for electromagnetic-scattering analysis (<i>7 pages</i>)	053834
Radius N. S. Suryadharma, Martin Fruhnert, Carsten Rockstuhl, and Ivan Fernandez-Corbaton	
Approach for describing spatial dynamics of quantum light-matter interaction in dispersive dissipative media (<i>9 pages</i>)	053835
A. A. Zyablovsky, E. S. Andrianov, I. A. Nechepurenko, A. V. Dorofeenko, A. A. Pukhov, and A. P. Vinogradov	
Oscillatory behavior of light in the composite Goos-Hänchen shift (<i>9 pages</i>)	053836
Manoel P. Araújo, Stefano De Leo, and Gabriel G. Maia	
Adaptive phase estimation with two-mode squeezed vacuum and parity measurement (<i>8 pages</i>)	053837
Zixin Huang, Keith R. Motes, Petr M. Anisimov, Jonathan P. Dowling, and Dominic W. Berry	
Interferometric quantum cascade systems (<i>15 pages</i>)	053838
Stefano Cusumano, Andrea Mari, and Vittorio Giovannetti	
Spin-orbit optomechanics of optically levitated chiral Bragg microspheres (<i>7 pages</i>)	053839
Georgiy Tkachenko, Mushegh Rafayelyan, and Etienne Brasselet	
Mollow triplet through pump-probe single-photon spectroscopy of artificial atoms (<i>16 pages</i>)	053840
Ya. S. Greenberg and A. N. Sultanov	
Preparing quasienergy states on demand: A parametric oscillator (<i>10 pages</i>)	053841
Yaxing Zhang and M. I. Dykman	
Steady-state light-mechanical quantum steerable correlations in cavity optomechanics (<i>10 pages</i>)	053842
Huatang Tan, Wenwu Deng, Qinglin Wu, and Gaoxiang Li	
Wood anomalies for s -polarized light incident on a one-dimensional metal grating and their coupling with channel plasmons (<i>7 pages</i>)	053843
A. I. Ignatov, A. M. Merzlikin, and A. V. Baryshev	
Antibunching in an optomechanical oscillator (<i>9 pages</i>)	053844
H. Seok and E. M. Wright	
Diagrammatic approach to multiphoton scattering (<i>14 pages</i>)	053845
Tian Feng See, Changsuk Noh, and Dimitris G. Angelakis	
Optical kinks and kink-kink and kink-pulse interactions in resonant two-level media (<i>8 pages</i>)	053846
Denis V. Novitsky	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 95, NUMBER 5

MAY 2017

Quantum properties of parametric four-wave mixing in a Raman-type atomic system (5 pages)	053812
A. V. Sharypov, Bing He, V. G. Arkhipkin, and S. A. Myslivets	
Energy shift between two relativistic laser pulses copropagating in plasmas (8 pages)	053813
S. L. Yang, C. T. Zhou, T. W. Huang, L. B. Ju, and X. T. He	
Characterization and shaping of the time-frequency Schmidt mode spectrum of bright twin beams generated in gas-filled hollow-core photonic crystal fibers (10 pages)	053814
M. A. Finger, N. Y. Joly, P. St. J. Russell, and M. V. Chekhova	
Optical microdisk cavities with rough sidewalls: A perturbative approach based on weak boundary deformations (9 pages)	053815
Jan Wiersig and Julius Kullig	
Quantum frequency conversion with ultra-broadband tuning in a Raman memory (5 pages)	053816
Philip J. Bustard, Duncan G. England, Khabat Heshami, Connor Kupchak, and Benjamin J. Sussman	
Optomechanical measurement of the Abraham force in an adiabatic liquid-core optical-fiber waveguide (9 pages)	053817
H. Choi, M. Park, D. S. Elliott, and K. Oh	
Spherically symmetric inhomogeneous bianisotropic media: Wave propagation and light scattering (11 pages)	053818
Andrey Novitsky, Alexander S. Shalin, and Andrei V. Lavrinenko	
Encoding qubits into oscillators with atomic ensembles and squeezed light (14 pages)	053819
Keith R. Motes, Ben Q. Baragiola, Alexei Gilchrist, and Nicolas C. Menicucci	
Knotted optical vortices in exact solutions to Maxwell's equations (5 pages)	053820
Albertus J. J. M. de Klerk, Roland I. van der Veen, Jan Willem Dalhuisen, and Dirk Bouwmeester	
☞ Giant acoustic atom: A single quantum system with a deterministic time delay (25 pages)	053821
Lingzhen Guo, Arne Grimsmo, Anton Frisk Kockum, Mikhail Pletyukhov, and Göran Johansson	
Optomechanically induced spontaneous symmetry breaking (8 pages)	053822
Mohammad-Ali Miri, Ewold Verhagen, and Andrea Alù	
Thermodynamic output of single-atom quantum optical amplifiers and their phase-space fingerprint (8 pages)	053823
Y. Perl, Y. B. Band, and E. Boukobza	
Characteristic spectra of circuit quantum electrodynamics systems from the ultrastrong- to the deep-strong-coupling regime (9 pages)	053824
F. Yoshihara, T. Fuse, S. Ashhab, K. Kakuyanagi, S. Saito, and K. Semba	
Quantifying nonclassicality by characteristic functions (12 pages)	053825
S. Ryl, J. Sperling, and W. Vogel	
Discontinuities in the electromagnetic fields of vortex beams in the complex source-sink model (9 pages)	053826
Andrew Vikartofsky, Liang-Wen Pi, and Anthony F. Starace	
Intrinsic transverse spin angular momentum of fiber eigenmodes (7 pages)	053827
Liang Fang and Jian Wang	
Quantum-optical description of losses in ring resonators based on field-operator transformations (16 pages)	053828
Paul M. Alsing, Edwin E. Hach III, Christopher C. Tison, and A. Matthew Smith	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A	THIRD SERIES, VOLUME 95, NUMBER 5	MAY 2017
Time-of-flight expansion of trapped dipolar Fermi gases: From the collisionless to the hydrodynamic regime (<i>17 pages</i>)		053635
Vladimir Veljić, Antun Balaž, and Axel Pelster		
Dual cascade and dissipation mechanisms in helical quantum turbulence (<i>6 pages</i>)		053636
Patricio Clark di Leoni, Pablo D. Mininni, and Marc E. Brachet		
Core filling and snaking instability of dark solitons in spin-imbalanced superfluid Fermi gases (<i>5 pages</i>)		053637
Matthew D. Reichl and Erich J. Mueller		
Emergence and scaling of spin turbulence in quenched antiferromagnetic spinor Bose-Einstein condensates (<i>8 pages</i>)		053638
Seji Kang, Sang Won Seo, Joon Hyun Kim, and Y. Shin		
Phase transition of ultracold atoms immersed in a Bose-Einstein-condensate vortex lattice (<i>9 pages</i>)		053639
R. H. Chaviguri, T. Comparin, V. S. Bagnato, and M. A. Caracanhas		
Quantum optics, physics of lasers, nonlinear optics, classical optics		
Optical surface breather in graphene (<i>7 pages</i>)		053801
G. T. Adamashvili and D. J. Kaup		
Transverse spinning of particles in highly focused vector vortex beams (<i>6 pages</i>)		053802
Manman Li, Shaohui Yan, Yansheng Liang, Peng Zhang, and Baoli Yao		
Second-harmonic-enhanced feedforward laser-intensity-noise stabilization (<i>6 pages</i>)		053803
M. Stefszky and C. Silberhorn		
Nonlinear dynamics of a two-level system of a single spin driven beyond the rotating-wave approximation (<i>6 pages</i>)		053804
K. Rama Koteswara Rao and Dieter Suter		
Elliptic Gaussian optical vortices (<i>8 pages</i>)		053805
V. V. Kotlyar, A. A. Kovalev, and A. P. Porfirev		
Full statistical mode reconstruction of a light field via a photon-number-resolved measurement (<i>6 pages</i>)		053806
I. A. Burenkov, A. K. Sharma, T. Gerrits, G. Harder, T. J. Bartley, C. Silberhorn, E. A. Goldschmidt, and S. V. Polyakov		
Waveguide transport mediated by strong coupling with atoms (<i>8 pages</i>)		053807
Mu-Tian Cheng, Jingping Xu, and Girish S. Agarwal		
Simultaneous enhancement of light extraction and spontaneous emission using a partially reflecting metasurface cavity (<i>7 pages</i>)		053808
Luzhou Chen, Karim Achouri, Efthymios Kallos, and Christophe Caloz		
Superbunching pseudothermal light (<i>9 pages</i>)		053809
Yu Zhou, Fu-li Li, Bin Bai, Hui Chen, Jianbin Liu, Zhuo Xu, and Huaibin Zheng		
Dual-switching behavior of nonlocal interfaces (<i>5 pages</i>)		053810
Julio Sánchez-Curto and Pedro Chamorro-Posada		
Theoretical description of a micromaser in the ultrastrong-coupling regime (<i>10 pages</i>)		053811
Deshui Yu, Leong Chuan Kwek, Luigi Amico, and Rainer Dumke		

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 95, NUMBER 5

MAY 2017

Tan's contact and the phase distribution of repulsive Fermi gases: Insights from quantum chromodynamics noise analyses (6 pages)	053619
William J. Porter and Joaquín E. Drut	
Momentum-resolved and correlation spectroscopy using quantum probes (10 pages)	053620
Francesco Cosco, Massimo Borrelli, Francesco Plastina, and Sabrina Maniscalco	
Full counting statistics of time-of-flight images (13 pages)	053621
Izabella Lovas, Balázs Dóra, Eugene Demler, and Gergely Zaránd	
Quantitative studies of the critical regime near the superfluid-to-Mott-insulator transition (6 pages)	053622
Hao Lee, Shiang Fang, and Daw-Wei Wang	
Local photoemission spectra and effects of spatial inhomogeneity in the BCS-BEC-crossover regime of a trapped ultracold Fermi gas (9 pages)	053623
Miki Ota, Hiroyuki Tajima, Ryo Hanai, Daisuke Inotani, and Yoji Ohashi	
Dynamics of disordered states in the Bose-Hubbard model with confinement (9 pages)	053624
Mi Yan, Hoi-Yin Hui, and V. W. Scarola	
Quantum effects in the cooperative scattering of light by atomic clouds (9 pages)	053625
Lorenzo Pucci, Analabha Roy, Tiago Santiago do Espirito Santo, Robin Kaiser, Michael Kastner, and Romain Bachelard	
Relation between $\mathcal{PT}$ -symmetry breaking and topologically nontrivial phases in the Su-Schrieffer-Heeger and Kitaev models (7 pages)	053626
Marcel Klett, Holger Cartarius, Dennis Dast, Jörg Main, and Günter Wunner	
Thermometry of a deeply degenerate Fermi gas with a Bose-Einstein condensate (11 pages)	053627
Rianne S. Lous, Isabella Fritsche, Michael Jag, Bo Huang (黄博), and Rudolf Grimm	
Fulde-Ferrell-Larkin-Ovchinnikov state to topological superfluidity transition in bilayer spin-orbit-coupled degenerate Fermi gases (8 pages)	053628
Liang-Liang Wang, Qing Sun, W.-M. Liu, G. Juzeliūnas, and An-Chun Ji	
Hidden long-range order in a spin-orbit-coupled two-dimensional Bose gas (8 pages)	053629
Shih-Wei Su, I-Kang Liu, Shih-Chuan Gou, Renyuan Liao, Oleksandr Fialko, and Joachim Brand	
Dynamic Kosterlitz-Thouless transition in two-dimensional Bose mixtures of ultracold atoms (7 pages)	053630
L. Mathey, Kenneth J. Günter, Jean Dalibard, and A. Polkovnikov	
Spin-incoherent Luttinger liquid of one-dimensional spin-1 Tonks-Girardeau Bose gases: Spin-dependent properties (12 pages)	053631
H. H. Jen and S.-K. Yip	
Four fermions in a one-dimensional harmonic trap: Accuracy of a variational-ansatz approach (7 pages)	053632
D. Pçcak, A. S. Dehkharghani, N. T. Zinner, and T. Sowiński	
Fermion pairing in mixed-dimensional atomic mixtures (9 pages)	053633
Junichi Okamoto, Ludwig Mathey, and Wen-Min Huang	
Fate of Weyl semimetals in the presence of incommensurate potentials (7 pages)	053634
Yucheng Wang and Shu Chen	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 95, NUMBER 5

MAY 2017

Renormalized contact interaction in degenerate unitary Bose gases (<i>8 pages</i>)	053602
Yijue Ding and Chris H. Greene	
Core structure of two-dimensional Fermi gas vortices in the BEC-BCS crossover region (<i>9 pages</i>)	053603
Lucas Madeira, Stefano Gandolfi, and Kevin E. Schmidt	
Kinetic theory of dark solitons with tunable friction (<i>12 pages</i>)	053604
Hilary M. Hurst, Dmitry K. Efimkin, I. B. Spielman, and Victor Galitski	
Universal scaling of unequal-time correlation functions in ultracold Bose gases far from equilibrium (<i>10 pages</i>)	053605
Andreas Schachner, Asier Piñeiro Orioli, and Jürgen Berges	
Critical behavior at the spatial boundary of a trapped inhomogeneous Bose-Einstein condensate (<i>9 pages</i>)	053606
Francesco Delfino and Ettore Vicari	
Superfluidity and spin superfluidity in spinor Bose gases (<i>10 pages</i>)	053607
J. Armaitis and R. A. Duine	
Toolbox for Abelian lattice gauge theories with synthetic matter (<i>15 pages</i>)	053608
Omjyoti Dutta, Luca Tagliacozzo, Maciej Lewenstein, and Jakub Zakrzewski	
Appropriate conditions to realize a p -wave superfluid state starting from a spin-orbit-coupled s -wave superfluid Fermi gas (<i>12 pages</i>)	053609
T. Yamaguchi, D. Inotani, and Y. Ohashi	
Quantum dynamical response of ultracold few-boson ensembles in finite optical lattices to multiple interaction quenches (<i>12 pages</i>)	053610
J. Neuhaus-Steinmetz, S. I. Mistakidis, and P. Schmelcher	
Location-dependent Raman transition in gravity-gradient measurements using dual atom interferometers (<i>7 pages</i>)	053612
Yuping Wang, Jiaqi Zhong, Hongwei Song, Lei Zhu, Yimin Li, Xi Chen, Runbing Li, Jin Wang, and Mingsheng Zhan	
Vortices in Bose-Einstein condensates with $\mathcal{PT}$ -symmetric gain and loss (<i>9 pages</i>)	053613
Lukas Schwarz, Holger Cartarius, Ziad H. Musslimani, Jörg Main, and Günter Wunner	
Ground-state properties of the one-dimensional unconstrained pseudo-anyon Hubbard model (<i>10 pages</i>)	053614
Wanzhou Zhang, Sebastian Greschner, Ernv Fan, Tony C. Scott, and Yunbo Zhang	
Nodal Brillouin-zone boundary from folding a Chern insulator (<i>9 pages</i>)	053615
Li-Jun Lang, Shao-Liang Zhang, and Qi Zhou	
Infinite barriers and symmetries for a few trapped particles in one dimension (<i>15 pages</i>)	053616
N. L. Harshman	
Interaction-induced Bloch oscillation in a harmonically trapped and fermionized quantum gas in one dimension (<i>5 pages</i>)	053617
Lijun Yang, Lihong Zhou, Wei Yi, and Xiaoling Cui	
Quantum dark solitons as qubits in Bose-Einstein condensates (<i>7 pages</i>)	053618
M. I. Shaukat, E. V. Castro, and H. Terças	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 95, NUMBER 5

MAY 2017

Cross sections for photoionization of fullerene molecular ions C_n^+ with $n = 40, 50, 70, 76, 78$, and 84 (<i>6 pages</i>)	053412
C. M. Thomas, K. K. Baral, N. B. Aryal, M. Habibi, D. A. Esteves-Macaluso, A. L. D. Kilcoyne, A. Aguilar, A. S. Schlachter, S. Schippers, A. Müller, and R. A. Phaneuf	
Experimental demonstration of a Rydberg-atom beam splitter (<i>5 pages</i>)	053413
J. Palmer and S. D. Hogan	
Photodetachment microscopy in time-dependent fields (<i>9 pages</i>)	053414
H. Ambalampitiya and I. I. Fabrikant	
Precise determination of the quadrupole transition matrix element of $^{40}\text{Ca}^+$ via branching-fraction and lifetime measurements (<i>6 pages</i>)	053415
H. Shao, Y. Huang, H. Guan, C. Li, T. Shi, and K. Gao	
Loading a linear Paul trap to saturation from a magneto-optical trap (<i>15 pages</i>)	053416
J. E. Wells, R. Blümel, J. M. Kwolek, D. S. Goodman, and W. W. Smith	
High-sensitivity spin-based electrometry with an ensemble of nitrogen-vacancy centers in diamond (<i>7 pages</i>)	053417
Edward H. Chen, Hannah A. Clevenson, Kerry A. Johnson, Linh M. Pham, Dirk R. Englund, Philip R. Hemmer, and Danielle A. Braje	
Lévy statistics of interacting Rydberg gases (<i>10 pages</i>)	053418
Thibault Vogt, Jingshan Han, Alexandre Thiery, and Wenhui Li	
Multielectron effects in the photoelectron momentum distribution of noble-gas atoms driven by visible-to-infrared-frequency laser pulses: A time-dependent density-functional-theory approach (<i>10 pages</i>)	053419
Mitsuko Murakami, G. P. Zhang, and Shih-I Chu	
Attosecond counter-rotating-wave effect in xenon driven by strong fields (<i>7 pages</i>)	053420
M. Anand, Stefan Pabst, Ojoon Kwon, and Dong Eon Kim	
Shot-noise-dominant regime for ellipsoidal nanoparticles in a linearly polarized beam (<i>11 pages</i>)	053421
Changchun Zhong and F. Robicheaux	
Electron correlation in beryllium: Effects in the ground state, short-pulse photoionization, and time-delay studies (<i>14 pages</i>)	053422
Juan J. Omiste, Wenliang Li, and Lars Bojer Madsen	
Emitter-site-selective photoelectron circular dichroism of trifluoromethyloxirane (<i>7 pages</i>)	053423
M. Ilchen, G. Hartmann, P. Rupprecht, A. N. Artemyev, R. N. Coffee, Z. Li, H. Ohldag, H. Ogasawara, T. Osipov, D. Ray, Ph. Schmidt, T. J. A. Wolf, A. Ehresmann, S. Moeller, A. Knie, and Ph. V. Demekhin	
Defect-free atomic array formation using the Hungarian matching algorithm (<i>6 pages</i>)	053424
Woojun Lee, Hyosub Kim, and Jaewook Ahn	
Experimental verification of the nonadiabatic effect in strong-field ionization with elliptical polarization (<i>8 pages</i>)	053425
Min Li, Ming-Ming Liu, Ji-Wei Geng, Meng Han, Xufei Sun, Yun Shao, Yongkai Deng, Chengyin Wu, Liang-You Peng, Qihuang Gong, and Yunquan Liu	
Matter waves and collective properties of cold atoms and molecules	
Internal structure and stability of vortices in a dipolar spinor Bose-Einstein condensate (<i>11 pages</i>)	053601
Magnus O. Borgh, Justin Lovegrove, and Janne Ruostekoski	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A	THIRD SERIES, VOLUME 95, NUMBER 5	MAY 2017
Anisotropic blockade using pendular long-range Rydberg molecules (<i>8 pages</i>)		052708
Matthew T. Eiles, Hyunwoo Lee, Jesús Pérez-Ríos, and Chris H. Greene		
Relativistic calculations of differential ionization cross sections: Application to antiproton-hydrogen collisions (<i>11 pages</i>)		052709
A. I. Bondarev, Y. S. Kozhedub, I. I. Tupitsyn, V. M. Shabaev, G. Plunien, and Th. Stöhlker		
Tetramer bound states in heteronuclear systems (<i>10 pages</i>)		052710
C. H. Schmickler, H.-W. Hammer, and E. Hiyama		
PART B		
Atomic and molecular processes in external fields, including interactions with strong fields and short pulses		
Photoionization in the presence of circularly polarized fundamental and odd-order harmonic fields (<i>7 pages</i>)		053401
I. A. Ivanov, Chang Hee Nam, and Kyung Taec Kim		
Photon-momentum transfer in photoionization: From few photons to many (<i>7 pages</i>)		053402
Szczepan Chelkowski, André D. Bandrauk, and Paul B. Corkum		
Sub-Doppler laser cooling using electromagnetically induced transparency (<i>9 pages</i>)		053403
Peiru He, Phoebe M. Tengdin, Dana Z. Anderson, Ana Maria Rey, and Murray Holland		
Spatial and temporal control of populations, branching ratios, and electronic coherences in LiH by a single one-cycle infrared pulse (<i>8 pages</i>)		053404
Astrid Nikodem, R. D. Levine, and F. Remacle		
Calculation of atomic photoionization using the nonsingular convergent close-coupling method (<i>5 pages</i>)		053405
A. W. Bray, A. S. Kheifets, and I. Bray		
Characterization of induced nanoplasmonic fields in time-resolved photoemission: A classical trajectory approach applied to gold nanospheres (<i>12 pages</i>)		053406
Erfan Saydanzad, Jianxiong Li, and Uwe Thumm		
Auger cascades in resonantly excited neon (<i>14 pages</i>)		053407
S. Stock, R. Beerwerth, and S. Fritzsche		
Identification of competing ionization processes in the generation of ultrafast electron bunches from cold-atom electron sources (<i>6 pages</i>)		053408
Rory W. Speirs, Andrew J. McCulloch, Ben M. Sparkes, and Robert E. Scholten		
Velocity selection of Rydberg positronium using a curved electrostatic guide (<i>11 pages</i>)		053409
A. M. Alonso, B. S. Cooper, A. Deller, L. Gurung, S. D. Hogan, and D. B. Cassidy		
Determination of the absolute carrier-envelope phase by angle-resolved photoelectron spectra of Ar by intense circularly polarized few-cycle pulses (<i>14 pages</i>)		053410
Shinichi Fukahori, Toshiaki Ando, Shun Miura, Reika Kanya, Kaoru Yamanouchi, Tim Rathje, and Gerhard G. Paulus		
Correlation-driven charge migration following double ionization and attosecond transient absorption spectroscopy (<i>9 pages</i>)		053411
Maximilian Hollstein, Robin Santra, and Daniela Pfannkuche		

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW A	THIRD SERIES, VOLUME 95, NUMBER 5	MAY 2017
Resonances in positronic lithium in hot and dense plasmas (<i>6 pages</i>) Arijit Ghoshal and Yew Kam Ho		052502
Cross-damping effects in $1S - 3S$ spectroscopy of hydrogen and deuterium (<i>7 pages</i>) H����� Fleurbaey, Fran��ois Biraben, Lucile Julien, Jean-Philippe Karr, and Fran��ois Nez		052503
Combining Slater-type orbitals and effective core potentials (<i>15 pages</i>) Micha�� Lesiuk, Aleksandra M. Tucholska, and Robert Moszynski		052504
Full self-consistency in the Fermi-orbital self-interaction correction (<i>8 pages</i>) Zeng-hui Yang, Mark R. Pederson, and John P. Perdew		052505
Relativistic corrections for the ground electronic state of molecular hydrogen (<i>8 pages</i>) Mariusz Puchalski, Jacek Komasa, and Krzysztof Pachucki		052506
Potassium tune-out-wavelength measurement using atom interferometry and a multipass optical cavity (<i>10 pages</i>) Raisa Trubko, Maxwell D. Gregoire, William F. Holmgren, and Alexander D. Cronin		052507
Universal experimental test for the role of free charge carriers in the thermal Casimir effect within a micrometer separation range (<i>13 pages</i>) G. Bimonte, G. L. Klimchitskaya, and V. M. Mostepanenko		052508
Probing weak dipole-dipole interaction using phase-modulated nonlinear spectroscopy (<i>12 pages</i>) Zeng-Zhao Li, Lukas Bruder, Frank Stienkemeier, and Alexander Eisfeld		052509
Quantum friction in arbitrarily directed motion (<i>13 pages</i>) J. Klatt, M. Bel��n Far��as, D. A. R. Dalvit, and S. Y. Buhmann		052510
Atomic and molecular collisions and interactions		
Time-dependent density-functional-theory investigation of the collisions of protons and α particles with uracil and adenine (<i>10 pages</i>) Cody Covington, Kara Hartig, Arthur Russakoff, Ryan Kulpins, and K��lm��n Varga		052701
Electron-impact dissociation and ionization of CN^+ ions (<i>11 pages</i>) D. S. Belic, X. Urbain, H. Cherkani-Hassani, and P. Defrance		052702
Ultracold atoms in quasi-one-dimensional traps: A step beyond the Lieb-Liniger model (<i>8 pages</i>) Krzysztof Jachymski, Florian Meinert, Hagar Veksler, Paul S. Julienne, and Shmuel Fishman		052703
Line ratios for soft-x-ray emission following charge exchange between O^{8+} and Kr (<i>6 pages</i>) D. G. Seely, V. M. Andrianarijaona, D. Wulf, K. Morgan, D. McCammon, M. Fogle, P. C. Stancil, R. T. Zhang, and C. C. Havener		052704
Three-dimensional modeling of resonant charge transfer between ion beams and metallic surfaces (<i>16 pages</i>) I. K. Gainullin		052705
Electronic stopping power of slow-light channeling ions in ZnTe from first principles (<i>8 pages</i>) Chang-kai Li, Fei Mao, Feng Wang, Yan-long Fu, Xiao-ping Ouyang, and Feng-Shou Zhang		052706
Role of the recoil ion in single-electron capture and single-ionization processes for collisions of protons with He and Ar atoms (<i>11 pages</i>) P. Focke, R. E. Olson, N. D. Caratore, M. Alessi, and S. Otranto		052707

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 95, NUMBER 5

MAY 2017

Experimental protection of arbitrary states in a two-qubit subspace by nested Uhrig dynamical decoupling (8 pages)	052337
Harpreet Singh, Arvind, and Kavita Dorai	
Experimental implementation of a quantum walk on a circle with single photons (7 pages)	052338
Zhi-Hao Bian, Jian Li, Xiang Zhan, Jason Twamley, and Peng Xue	
Compressed quantum computation using a remote five-qubit quantum computer (7 pages)	052339
M. Hebenstreit, D. Alsina, J. I. Latorre, and B. Kraus	
Qudit hypergraph states (13 pages)	052340
F. E. S. Steinhoff, C. Ritz, N. I. Miklin, and O. Gühne	
Entangling two oscillators with arbitrary asymmetric initial states (7 pages)	052341
Chui-Ping Yang, Qi-Ping Su, Shi-Biao Zheng, Franco Nori, and Siyuan Han	
Universal quantum control in zero-field nuclear magnetic resonance (6 pages)	052342
Ji Bian, Min Jiang, Jiangyu Cui, Xiaomei Liu, Botao Chen, Yunlan Ji, Bo Zhang, John Blanchard, Xinhua Peng, and Jiangfeng Du	
Optimal continuous-variable teleportation under energy constraint (7 pages)	052343
Jaehak Lee, Jiyong Park, and Hyunchul Nha	
Construction of nonlocal multipartite quantum states (5 pages)	052344
Zhi-Chao Zhang, Ke-Jia Zhang, Fei Gao, Qiao-Yan Wen, and C. H. Oh	
Complementarity between entanglement-assisted and quantum distributed random access code (9 pages)	052345
Alley Hameedi, Debashis Saha, Piotr Mironowicz, Marcin Pawłowski, and Mohamed Bourennane	
Indistinguishability of bipartite states by positive-partial-transpose operations in the many-copy scenario (6 pages)	052346
Yinan Li, Xin Wang, and Runyao Duan	
Optimal entanglement witnesses in a split spin-squeezed Bose-Einstein condensate (8 pages)	052347
Enky Oudot, Jean-Daniel Bancal, Roman Schmied, Philipp Treutlein, and Nicolas Sangouard	
Adaptive tracking of a time-varying field with a quantum sensor (10 pages)	052348
Cristian Bonato and Dominic W. Berry	
Robust paths to realize nonadiabatic holonomic gates (7 pages)	052349
G. F. Xu, P. Z. Zhao, D. M. Tong, and Erik Sjöqvist	
Discrepancies between asymptotic and exact spectral-gap analyses of quantum adiabatic barrier tunneling (8 pages)	052350
Lucas T. Brady and Wim van Dam	
Decomposition of split-step quantum walks for simulating Majorana modes and edge states (7 pages)	052351
Wei-Wei Zhang, Sandeep K. Goyal, Christoph Simon, and Barry C. Sanders	
Polynomial approximation of non-Gaussian unitaries by counting one photon at a time (10 pages)	052352
Francesco Arzani, Nicolas Treps, and Giulia Ferrini	
Atomic and molecular structure and dynamics	
Even-parity Rydberg and autoionizing states of lutetium by laser resonance-ionization spectroscopy (11 pages)	052501
R. Li, J. Lassen, Z. P. Zhong, F. D. Jia, M. Mostamand, X. K. Li, B. B. Reich, A. Teigelhöfer, and H. Yan	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A	THIRD SERIES, VOLUME 95, NUMBER 5	MAY 2017
Fast ion swapping for quantum-information processing (9 pages)		052319
H. Kaufmann, T. Ruster, C. T. Schmiegelow, M. A. Luda, V. Kaushal, J. Schulz, D. von Lindenfels, F. Schmidt-Kaler, and U. G. Poschinger		
Discontinuities of the quantum Fisher information and the Bures metric (13 pages)		052320
Dominik Šafránek		
Robust guaranteed-cost adaptive quantum phase estimation (16 pages)		052322
Shibdas Roy, Dominic W. Berry, Ian R. Petersen, and Elanor H. Huntington		
Witness for initial correlations among environments (10 pages)		052323
F. T. Tabesh, S. Salimi, and A. S. Khorashad		
Quantum protocols within Spekkens' toy model (22 pages)		052324
Leonardo Disilvestro and Damian Markham		
Energy spectrum, exchange interaction, and gate crosstalk in a system with a pair of double quantum dots: A molecular-orbital calculation (10 pages)		052325
Xu-Chen Yang and Xin Wang		
Entanglement witness game (5 pages)		052326
Xing Chen, Xueyuan Hu, and D. L. Zhou		
Nonholonomic tomography. I. The Born rule as a connection between experiments (10 pages)		052327
Christopher Jackson and Steven van Enk		
Nonholonomic tomography. II. Detecting correlations in multiqubit systems (10 pages)		052328
Christopher Jackson and Steven van Enk		
Quantum and superquantum enhancements to two-sender, two-receiver channels (11 pages)		052329
Yihui Quek and Peter W. Shor		
Two-qubit entangling gates between distant atomic qubits in a lattice (10 pages)		052330
A. Cesa and J. Martin		
Versatile Gaussian probes for squeezing estimation (16 pages)		052331
Luca Rigovacca, Alessandro Farace, Leonardo A. M. Souza, Antonella De Pasquale, Vittorio Giovannetti, and Gerardo Adesso		
Robust quantum state transfer inspired by Dzyaloshinskii-Moriya interactions (9 pages)		052332
X. Shi, H. Yuan, X. Mao, Y. Ma, and H. Q. Zhao		
Tunable inductive coupling of superconducting qubits in the strongly nonlinear regime (26 pages)		052333
Dvir Kafri, Chris Quintana, Yu Chen, Alireza Shabani, John M. Martinis, and Hartmut Neven		
Contextuality and Wigner-function negativity in qubit quantum computation (22 pages)		052334
Robert Raussendorf, Dan E. Browne, Nicolas Delfosse, Cihan Okay, and Juan Bermejo-Vega		
High-fidelity hot gates for generic spin-resonator systems (26 pages)		052335
M. J. A. Schuetz, G. Giedke, L. M. K. Vandersypen, and J. I. Cirac		
Practical repeaters for ultralong-distance quantum communication (7 pages)		052336
Scott E. Vinay and Pieter Kok		

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A	THIRD SERIES, VOLUME 95, NUMBER 5	MAY 2017
Robust continuous-variable quantum key distribution against practical attacks (<i>8 pages</i>)		052302
Peng Huang, Jingzheng Huang, Tao Wang, Huasheng Li, Duan Huang, and Guihua Zeng		
Generation of robust tripartite entanglement with a single-cavity optomechanical system (<i>5 pages</i>)		052303
Xihua Yang, Yang Ling, Xuping Shao, and Min Xiao		
Optimal conventional measurements for quantum-enhanced interferometry (<i>8 pages</i>)		052304
Wei Zhong, Yixiao Huang, Xiaoguang Wang, and Shi-Liang Zhu		
Correlation-based entanglement criteria for bipartite systems (<i>6 pages</i>)		052305
Yumang Jing, Qiongyi He, and Tim Byrnes		
Coherence-generating power of quantum unitary maps and beyond (<i>7 pages</i>)		052306
Paolo Zanardi, Georgios Styliaris, and Lorenzo Campos Venuti		
Measures of coherence-generating power for quantum unital operations (<i>7 pages</i>)		052307
Paolo Zanardi, Georgios Styliaris, and Lorenzo Campos Venuti		
Optimal sequential measurements for bipartite state discrimination (<i>15 pages</i>)		052308
Sarah Croke, Stephen M. Barnett, and Graeme Weir		
Hybrid annealing: Coupling a quantum simulator to a classical computer (<i>6 pages</i>)		052309
Tobias Graß and Maciej Lewenstein		
Gaussian two-mode attacks in one-way quantum cryptography (<i>9 pages</i>)		052310
Carlo Ottaviani, Stefano Mancini, and Stefano Pirandola		
Swapping of Gaussian Einstein-Podolsky-Rosen steering (<i>6 pages</i>)		052311
Meihong Wang, Zhongzhong Qin, and Xiaolong Su		
Numerical assessment and optimization of discrete-variable time-frequency quantum key distribution (<i>6 pages</i>)		052312
Jasper Rödiger, Nicolas Perlot, Roberto Mottola, Robert Elschner, Carl-Michael Weinert, Oliver Benson, and Ronald Freund		
There is more to quantum interferometry than entanglement (<i>10 pages</i>)		052313
Thomas R. Bromley, Isabela A. Silva, Charlie O. Oncebay-Segura, Diogo O. Soares-Pinto, Eduardo R. deAzevedo, Tommaso Tufarelli, and Gerardo Adesso		
Entanglement concentration of microwave photons based on the Kerr effect in circuit QED (<i>9 pages</i>)		052314
Hao Zhang (张浩) and Haibo Wang (王海波)		
Improved classical and quantum random access codes (<i>13 pages</i>)		052315
O. Liabøtrø		
Quantum circuits for quantum channels (<i>9 pages</i>)		052316
Raban Iten, Roger Colbeck, and Matthias Christandl		
Ancilla-driven quantum computation for qudits and continuous variables (<i>14 pages</i>)		052317
Timothy Proctor, Melissa Giulian, Natalia Korolkova, Erika Andersson, and Viv Kendon		
Structure of the thermodynamic arrow of time in classical and quantum theories (<i>13 pages</i>)		052318
Kamil Korzekwa		

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A	THIRD SERIES, VOLUME 95, NUMBER 5	MAY 2017
Modified quantum-speed-limit bounds for open quantum dynamics in quantum channels (<i>6 pages</i>)		052118
Xin Liu, Wei Wu, and Chao Wang		
Adjoint master equation for quantum Brownian motion (<i>10 pages</i>)		052119
Matteo Carlesso and Angelo Bassi		
Path of a tunneling particle (<i>10 pages</i>)		052120
Charis Anastopoulos and Ntina Savvidou		
Controlling speedup in open quantum systems through manipulation of system-reservoir bound states (<i>5 pages</i>)		052121
N. Behzadi, B. Ahansaz, A. Ektesabi, and E. Faizi		
Non-Hermitian description of the dynamics of interchain pair tunneling (<i>9 pages</i>)		052122
X. Z. Zhang, L. Jin, and Z. Song		
Quantum-mechanical inclusion of the source in the Aharonov-Bohm effects (<i>23 pages</i>)		052123
Philip Pearle and Anthony Rizzi		
Quantized vector potential and alternative views of the magnetic Aharonov-Bohm phase shift (<i>13 pages</i>)		052124
Philip Pearle and Anthony Rizzi		
Optimal quantum roto-sensors (<i>5 pages</i>)		052125
C. Chryssomalakos and H. Hernández-Coronado		
Enabling quantum non-Markovian dynamics by injection of classical colored noise (<i>13 pages</i>)		052126
J. I. Costa-Filho, R. B. B. Lima, R. R. Paiva, P. M. Soares, W. A. M. Morgado, R. Lo Franco, and D. O. Soares-Pinto		
Casimir force and its relation to surface tension (<i>7 pages</i>)		052127
J. S. Høye and I. Brevik		
Analytical results for a parity-time-symmetric two-level system under synchronous combined modulations (<i>6 pages</i>)		052128
Xiaobing Luo, Baiyuan Yang, Xiaofei Zhang, Lei Li, and Xiaoguang Yu		
Simultaneous measurement of two noncommuting quantum variables: Solution of a dynamical model (<i>20 pages</i>)		052129
Martí Perarnau-Llobet and Theodorus Maria Nieuwenhuizen		
Robustness and fragility of Markovian dynamics in a qubit dephasing channel (<i>6 pages</i>)		052130
Filip A. Wudarski and Francesco Petruccione		
Targeting pure quantum states by strong noncommutative dissipation (<i>11 pages</i>)		052131
Vladislav Popkov, Carlo Presilla, and Johannes Schmidt		
Remote parameter estimation in a quantum spin chain enhanced by local control (<i>6 pages</i>)		052132
Jukka Kiukas, Kazuya Yuasa, and Daniel Burgarth		
Quantum information		
Quantification of concurrence via weak measurement (<i>6 pages</i>)		052301
Mikko Tukiainen, Hirokazu Kobayashi, and Yutaka Shikano		

(Continued)

ARTICLES

Fundamental concepts

Theoretical study of the double Compton effect with twisted photons (<i>13 pages</i>)	052101
J. A. Sherwin	
Fidelity of dynamical maps (<i>14 pages</i>)	052102
Mikko Tukiainen, Henri Lyyra, Gniewomir Sarbicki, and Sabrina Maniscalco	
Test of a hypothesis of realism in quantum theory using a Bayesian approach (<i>17 pages</i>)	052103
N. Nikitin and K. Toms	
Quantum dynamical speedup in a nonequilibrium environment (<i>6 pages</i>)	052104
Xiangji Cai (蔡祥吉) and Yujun Zheng (郑雨军)	
N -term pairwise-correlation inequalities, steering, and joint measurability (<i>11 pages</i>)	052105
H. S. Karthik, A. R. Usha Devi, J. Prabhu Tej, A. K. Rajagopal, Sudha, and A. Narayanan	
Relative quantum coherence, incompatibility, and quantum correlations of states (<i>6 pages</i>)	052106
Ming-Liang Hu and Heng Fan	
Solutions for bosonic and fermionic dissipative quadratic open systems (<i>15 pages</i>)	052107
Chu Guo and Dario Poletti	
Weak-coupling master equation for arbitrary initial conditions (<i>12 pages</i>)	052108
Jad C. Halimeh and Inés de Vega	
Dissipation in the Caldeira-Leggett model (<i>5 pages</i>)	052109
L. Ferialdi	
Infrared problem in quantum acoustodynamics (<i>4 pages</i>)	052110
Dennis P. Clougherty and Sanghita Sengupta	
Wigner functions for angle and orbital angular momentum: Operators and dynamics (<i>13 pages</i>)	052111
H. A. Kastrup	
Structures far below the sub-Planck scale in quantum phase space through superoscillations (<i>3 pages</i>)	052112
Maxime Oliva and Ole Steuernagel	
Behavior of eigenvalues in a region of broken $\mathcal{PT}$ symmetry (<i>13 pages</i>)	052113
Carl M. Bender, Nima Hassanpour, Daniel W. Hook, S. P. Klevansky, Christoph Sünderhauf, and Zichao Wen	
Manipulating the direction of Einstein-Podolsky-Rosen steering (<i>6 pages</i>)	052114
Zhongzhong Qin, Xiaowei Deng, Caixing Tian, Meihong Wang, Xiaolong Su, Changde Xie, and Kunchi Peng	
Universal locality of quantum thermal susceptibility (<i>5 pages</i>)	052115
Giacomo De Palma, Antonella De Pasquale, and Vittorio Giovannetti	
Detecting gravitational decoherence with clocks: Limits on temporal resolution from a classical-channel model of gravity (<i>7 pages</i>)	052116
Kiran E. Khosla and Natacha Altamirano	
Tighter uncertainty and reverse uncertainty relations (<i>5 pages</i>)	052117
Debasis Mondal, Shrobona Bagchi, and Arun Kumar Pati	

(Continued)

*The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 050101(R)–052710, and Part B pages 053401–059910(E).*

PART A

RAPID COMMUNICATIONS

Fundamental concepts

- Minimal complexity of Kochen-Specker sets does not scale with dimension (*6 pages*) 050101(R)
Mordecai Waegell and P. K. Aravind

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

- Isolating strong-field dynamics in molecular systems (*5 pages*) 051401(R)
Gal Orenstein, Oren Pedatzur, Ayelet J. Uzan, Barry D. Bruner, Yann Mairesse, and Nirit Dudovich

Matter waves and collective properties of cold atoms and molecules

- Finite-temperature phases of two-dimensional spin-orbit-coupled bosons (*5 pages*) 051601(R)
Eiji Kawasaki and Markus Holzmann

- One-body density matrix and momentum distribution of strongly interacting one-dimensional spinor quantum gases (*7 pages*) 051602(R)
Li Yang and Han Pu

- Two-dimensional Fermi gas in antiparallel magnetic fields (*6 pages*) 051603(R)
Takaaki Anzai and Yusuke Nishida

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

- Radial index of Laguerre-Gaussian modes in high-order-harmonic generation (*5 pages*) 051801(R)
Romain G  neaux, C  line Chappuis, Thierry Auguste, Samuel Beaulieu, Timothy T. Gorman, Fabien Lepetit, Louis F. DiMauro, and Thierry Ruchon

- Single-step fabrication of scalable multimode quantum resources using four-wave mixing with a spatially structured pump (*6 pages*) 051802(R)
Hailong Wang, Claude Fabre, and Jietai Jing

