

PHYSICAL REVIEW A

covering atomic, molecular, and optical physics and quantum information

EDITORIAL BOARD

Term ending 31 December 2017

F. CHEVY	Ultracold Atoms
E. A. HESSELS	High-Precision Spectroscopy
P. KOK	Quantum Optics and Quantum Information
B. KRAUS	Quantum Information Theory
C. W. MCCURDY	Atomic and Molecular Continuum Processes
J. H. SHAPIRO	Quantum Optics
G. STEINMEYER	Ultrafast Lasers and Phenomena, Nonlinear Optics
M. XIAO	Quantum Optics and Atomic Coherence

Term ending 31 December 2018

A. J. DALEY	Cold Quantum Gases and Quantum Optics
M. I. EIDES	Quantum Field Theory and Fundamental Interactions
L. B. MADSEN	Attosecond Physics, and Atoms and Molecules in Strong Fields
R. MOSHAMMER	Atomic and Molecular Interactions
W. J. MUNRO	Quantum Information Processing, Quantum Optics
S. PASCAZIO	Cold Atoms, Entanglement, and Quantum Information
H. PU	Theory of Quantum Gases
M. SAFRONOVA	Atomic Theory and Structure
B. M. TERHAL	Quantum Information

Term ending 31 December 2019

G. ALBER	Quantum Optics and Quantum Information
D. BAUER	Atoms, Molecules, and Clusters in Strong Fields
J. L. BOHN	Cold Atoms
G. CAMPBELL	Ultracold Atoms
N. GOLDMAN	Ultracold Atoms, Quantum Simulation, and Topological Properties in Quantum Matter
P. HORAK	Nonlinear and Quantum Optics, Photonic Systems
V. KENDON	Quantum Information Processing and Computational Physics
T. KIRCHNER	Dynamics, Interactions, and Collisions of Atomic and Molecular Few-Body Systems
A. F. KOENDERINK	Nano-optics, Photonic Systems, and Quantum Optics
V. I. KOROBV	Theoretical Atomic and Molecular Physics
F. MARINO	Nonlinear Optics and Optomechanics
D. PETROSYAN	Quantum Optics and Quantum Information
P. RABL	Theoretical Quantum Optics, Quantum Computing, and Quantum Simulation
S. WABNITZ	Nonlinear Optics and Soliton Theory

American Physical Society

<i>President</i>	LAURA GREENE
<i>Speaker of Council</i>	DAN KLEPPNER
<i>Chief Executive Officer</i>	KATE P. KIRBY
<i>Editor in Chief</i>	PIERRE MEYSTRE
<i>Publisher</i>	MATTHEW SALTER
<i>Chief Information Officer</i>	MARK D. DOYLE
<i>Chief Financial Officer</i>	JANE HOPKINS GOULD
<i>Deputy Executive Officer and Chief Operating Officer</i>	JAMES TAYLOR
One Physics Ellipse College Park, MD 20740-3844	

APS Editorial Office

Directors	DANIEL T. KULP
<i>Editorial</i>	CHRISTINE M. GIACCONE
<i>Journal Operations</i>	
1 Research Road Ridge, NY 11961-2701 Phone: (631) 591-4010 Email: pra@aps.org Web: http://journals.aps.org/ Submissions: http://authors.aps.org/Submissions/	

Member Subscriptions:

APS Membership Department	
One Physics Ellipse College Park, MD 20740-3844	
Phone: (301) 209-3280	Fax: (301) 209-0867
Email: membership@aps.org	

Institutional Subscriptions:

APS Subscription Services	
P.O. Box 41 Annapolis Junction, MD 20701	
Toll free: (888) 339-9655	
Phone: (301) 617-7809	Email: subs@aps.org

Editor
GORDON W. F. DRAKE
(University of Windsor)

Managing Editor
THOMAS PATTARD
(APS Editorial Office)

Associate Editors
ERIKA ANDERSSON
(Heriot-Watt University)
DOERTE BLUME
(University of Oklahoma)
DIRK JAN BUKMAN
(APS Editorial Office)
KATIUSCIA CASSEMIRO
(APS Editorial Office)

FRANCO DALFOVO
(Università di Trento)
MARK HILLERY
(Hunter College)
FRANK NARDUCCI
(Naval Postgraduate School)
MARK SAFFMAN
(University of Wisconsin)
YUJUN WANG
(APS Editorial Office)
MAREK ZUKOWSKI
(University of Gdansk)

Senior Assistant Editors
MARGARET FOSTER
JILL M. GARGANO

Assistant Editors
SERENA BRADDE
JUAN-JOSÉ LIÉTOR-SANTOS

Senior Editorial Assistant
TERRE ARENA

Manuscripts should be submitted electronically in acceptable format (see <http://authors.aps.org/Submissions/>). Submission is a representation that the manuscript has not been published previously and is not currently under consideration for publication elsewhere. An executed **APS copyright-transfer** form must be provided (effective only on acceptance for publication). Information for Contributors and a description of editorial Policies and Practices can be found at <http://journals.aps.org/pras/authors>.

To help defray editorial and production expenses, authors of manuscripts which are not submitted in acceptable electronic format are expected to pay a **publication charge** of \$1490/article, \$930/Rapid Communication, \$340/Comment or Reply. Acceptable formats are REVTeX (preferred), L^AT_EX, plain T_EX; MS Word; PostScript figures (preferred). **Reprints** are offered for sale to authors.

For additional information regarding the online version of this journal, please visit: <http://journals.aps.org/pras>. Institutional subscribers requesting address changes, filing claims, or requesting additional information, please contact the APS Services at subs@aps.org. Member subscribers requiring changes, claims or additional information should contact the APS Membership Department at membership@aps.org.

Copyright © 2017 American Physical Society. All rights reserved.

Physical Review A™ is a trademark of the American Physical Society, registered in the United States, Canada, European Union and Japan.

Rights and Permissions: <http://journals.aps.org/copyrightFAQ.html>

Copying: No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the written permission of the publisher, except as stated below. Single copies of individual articles may be made for private use or research. Authorization is given to copy articles beyond the use permitted by Sections 107 and 108 of the U.S. Copyright Law, provided the copying fee of \$25.00 per copy per article is paid to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA.

Reproduction of an entire article in a reprint collection, or for advertising or promotional purposes, or republication in any form requires permission from APS. Permission must be sought via the Copyright Clearance Center (CCC) RightsLink system. To request permission to republish, refer to the Reuse and Permissions link that can be found on each APS article page and provide the requested information.

Other Use: Permission is granted to quote from the journal with the customary acknowledgment of the source. Permission must be sought using the Copyright Clearance Center (CCC) RightsLink system. To request permission to reproduce a figure, table, or excerpt of an article refer to the Reuse and Permissions link that can be found on each APS article page and provide the requested information. Authorization for private use or research does not extend to systematic or multiple reproduction, to copying for promotional purposes, to distribution in any format, or to republication in any form. In all such cases, specific permission from APS must be obtained.

Physical Review A [ISSN: 2469-9926 (print), 2469-9934 (online); CODEN PLRAAN; printed in USA] is published monthly by the American Physical Society, 1 Research Road, Ridge, NY 11961-2701.

POSTMASTER: Send address changes to *Physical Review A*, APS Subscription Services, P.O. Box 41, Annapolis Junction, MD 20701. The 2017 print + online base price is \$4030. Periodicals postage rates are paid at College Park, MD, and additional mailing offices.