

PHYSICAL REVIEW E

covering statistical, nonlinear, biological, and soft matter physics

EDITORIAL BOARD

Term ending 31 December 2019

F. BORGONOV	Classical and Quantum Chaos
E. S. C. CHING	Turbulence
S. CILIBERTO	Nonequilibrium Systems, Fluid Mechanics
J. P. GLEESON	Complex Networks, Stochastic Processes
S. GRANICK	Soft and Living Matter
I. H. HUTCHINSON	Plasma Physics
A. KUDROLLI	Granular Matter, Nonlinear Dynamics
F. LEYVRAZ	Statistical Physics
M. P. MARDER	Fracture and Friction, Pattern Formation
S. SUCCI	Computational Fluid Dynamics
U. C. TÄUBER	Statistical Physics, Biological Physics
J. M. YEOMANS	Soft and Active Matter, Computational Physics

Term ending 31 December 2020

E. G. ALTMANN	Nonlinear Dynamics, Chaos, Complex Systems
A. BUKA	Liquid Crystals, Pattern Formation
D. GAUTHIER	Quantum Chaos
D. GRIER	Colloids, Complex Fluids
W. HORSTHEMKE	Stochastic Physics, Chemical Kinetics
J. KERTESZ	Networks, Complex Systems
U. SCHWARZ	Soft Matter and Biological Physics
U. SEIFERT	Statistical Physics, Thermodynamics
L. TUCKERMAN	Fluid Dynamics
J. YANG	Solitons, Nonlinear Waves
L. ZDEBOROVA	Disordered Systems, Machine Learning

Term ending 31 December 2021

S. BOETTCHER	Statistical Physics, Complex Systems
H. DIAMANT	Solid Mechanics, Colloids, Membranes
L. R. EVANGELISTA	Liquid Crystals, Complex Fluids
S. FAUVE	Fluid Dynamics, Nonlinear Dynamics
H. HAYAKAWA	Granular Materials, Kinetic Theory, Nonequilibrium Statistical Mechanics
S. KLUMPP	Biological Physics
Y. LEVIN	Statistical Physics, Complex Fluids
U. PARLITZ	Nonlinear Dynamics, Chaos
F. RADICCHI	Complex Networks, Data Analytics
B. SPAGNOLO	Stochastic Dynamics, Nonequilibrium Statistical Mechanics, Biological Physics
D. VAN DER MEER	Granular Matter, Physics of Fluids
I. Y. DODIN	Plasma Physics

American Physical Society

<i>President</i>	DAVID J. GROSS
<i>Speaker of Council</i>	JOHN RUMBLE
<i>Chief Executive Officer</i>	KATE P. KIRBY
<i>Editor in Chief</i>	MICHAEL THOENNESSEN
<i>Publisher</i>	MATTHEW SALTER
<i>Chief Information Officer</i>	MARK D. DOYLE
<i>Chief Financial Officer</i>	MARGARET BANDERA
<i>Deputy Executive Officer and</i>	
<i>Chief Operating Officer</i>	JAMES TAYLOR
<i>Chief Government Affairs</i>	
<i>Officer</i>	FRANCIS SLAKEY

One Physics Ellipse
College Park, MD 20740-3844

APS Editorial Office

Directors

<i>Editorial</i>	DANIEL T. KULP
<i>Journal Operations</i>	CHRISTINE M. GIACCONE

1 Research Road
Ridge, NY 11961-2701
Phone: (631) 591-4050

Email: pre@aps.org
Web: <https://journals.aps.org/>

Submissions: <https://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
ELI BEN-NAIM
(Los Alamos National Laboratory)

Managing Editor
DIRK JAN BUKMAN
(APS Editorial Office)

Associate Editors
ALEX ARENAS
(Universitat Rovira i Virgili)
SERENA BRADDE
(APS Editorial Office)
RALF BUNDSCHUH
(The Ohio State University)
RONALD DICKMAN
(Universidade Federal de Minas Gerais)
BRUNO ECKHARDT
(Philipps-Universität Marburg)

ANTAL JÁKLI
(Kent State University)
MAGNUS JOHANSSON
(Linköping University)
JUAN-JOSÉ LIÉTOR-SANTOS
(APS Editorial Office)
THOMAS PATTARD
(APS Editorial Office)
ANTONIO POLITI
(University of Aberdeen)
ALEXANDER WAGNER
(North Dakota State University)

Senior Assistant Editors
MARGARET FOSTER
JILL M. GARGANO

Assistant Editor
KATIUSCIA CASSEMIRO
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/pre/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 \$1620/article, \$1010/Rapid Communication, \$370/Comment or Reply. Acceptable formats are REV_TEX (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/pre>. 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 © 2019 American Physical Society. All rights reserved.

*Physical Review E*TM 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 Aptara's SciPrisTM platform. 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 Aptara's SciPrisTM platform. 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 E [ISSN: 2470-0045 (print), 2470-0053 (online); CODEN PLEEE8; printed in USA] is published monthly by the American Physical Society, 1 Research Road, Ridge, NY 11961-2701.