

PHYSICAL REVIEW E

STATISTICAL PHYSICS, PLASMAS, FLUIDS, AND RELATED INTERDISCIPLINARY TOPICS

Editor

IRWIN OPPENHEIM
(Massachusetts Institute of Technology)

Associate Editors

NEAL ABRAHAM
(DePauw University)

GERALD HEDSTROM
(Lawrence Livermore National Laboratory)

BRANT M. JOHNSON
(Brookhaven National Laboratory)

YURI KIVSHAR
(Australian National University)

MARGARET MALLOY
(APS Editorial Office)

ANTONIO POLITI
(Istituto Nazionale di Ottica)

DANIEL ROTHMAN
(Massachusetts Institute of Technology)

DAVID WEITZ
(University of Pennsylvania)

Senior Assistants to the Editor

DEBBIE BRODBAR
MARGARET FOSTER
VALERIE L. MILLER
JOANNA POPADIUK

APS Editorial Office

1 Research Road, Box 9000
Ridge, NY 11961-9000
Phone: (631) 591-4050
Fax: (631) 591-4141
Email: pre@aps.org
Web: <http://publish.aps.org/>
Submissions: pretex@aps.org or
<http://publish.aps.org/ESUB/>

EDITORIAL BOARD

Term ending 31 December 1999

I. B. BERNSTEIN	Plasmas
Y. KURAMOTO	Nonlinear Physics
F. E. MOSS	Biological Physics
J. F. NAGLE	Biological Physics
R. PINDAK	Liquid Crystals
K. R. SREENIVASAN	Nonlinear Dynamics,
	Fluid Dynamics, Turbulence
N. G. VAN KAMPEN	Statistical Mechanics

Term ending 31 December 2000

J. J. BISOGNANO	Beam Physics
D. GRIFFITHS	Electrodynamics
M. C. GUTZWILLER	Statistical Physics,
	Chaos
E. J. HINCH	Fluid Dynamics
A. LIU	Complex Fluids, Polymers
T. LUBENSKY	Liquid Crystals,
	Complex Fluids
S. NAGEL	Glass Transitions,
	Granular Materials

Term ending 31 December 2001

A. AHARONY	Critical Phenomena,
	Percolation
A. ALBANO	Statistical Physics, Chaos
D. CHANDLER	Chemical Physics
J. R. DORFMAN	Statistical Physics
J. KRUG	Statistical Physics
P. MANNEVILLE	Nonlinear Physics,
	Hydrodynamics
G. PARISI	Statistical Physics
C. REBBI	Computational Physics
W. B. RUSSEL	Complex Fluids, Fluid
	Dynamics
J. SOMMERER	Experimental Chaos
H. SOMPOLINSKY	Disordered Systems, Spin
	Glasses, Neural Networks
R. TEMKIN	Beam Physics

The American Physical Society
One Physics Ellipse
College Park, MD 20740-3844

<i>President</i>	JEROME I. FRIEDMAN
<i>President-Elect</i>	JAMES S. LANGER
<i>Vice-President</i>	GEORGE H. TRILLING
<i>Editor-in-Chief</i>	MARTIN BLUME
<i>Treasurer and</i>	
<i>Publisher</i>	THOMAS J. MCILRATH
<i>Executive Officer</i>	JUDY R. FRANZ

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

Nonmember Subscriptions:

AIP Circulation & Fulfillment

Suite 1N01
2 Huntington Quadrangle
Melville, NY 11747-4502
Phone: (516) 576-2270, (800) 344-6902
Fax: (516) 349-9704
Email: subs@aip.org

Production and distribution by

American Institute of Physics
Suite 1N01
2 Huntington Quadrangle
Melville, NY 11747-4502
Phone: (516) 576-2200
Fax: (516) 576-2643
Email: pre@aip.org

Manuscripts may be submitted electronically if in appropriate format (see <http://publish.aps.org/ESUB/> or inquire at pretex@aps.org). Alternatively, send four copies to the Editorial Office. Submission is a representation that the manuscript has not been published previously and is not currently under consideration for publication elsewhere. A signed **APS copyright-transfer** form (effective only on acceptance for publication) must be provided; the form appears at the end of the 7 June 1999 issue of *Physical Review Letters* and is available on our Web server. Information for contributors may be found on our Web server or in the January and July issues.

To support wide dissemination of research results, we request payment of a publication charge of \$80 per page plus an \$80 abstract charge. For properly prepared electronic submissions, no payment of charges is requested. Acceptable formats are REVTeX (preferred), LaTeX, Harvmac, Plain TeX; PostScript figures. **Reprints** are offered for sale to authors.

For information about **subscription prices** and about the **online version** of the journal, see our Web server, or inquire at assocpub@aps.org. **Member** inquiries regarding **subscriptions**, renewals, address changes, missing or damaged copies, microfilm, and single-copy orders should be addressed to the APS Membership Department. **Nonmembers** should address subscription inquiries to the AIP Circulation and Fulfillment Division. For address changes please send both old and new addresses, and, if possible, include an address stencil imprint from the mailing wrapper of a recent issue; allow six weeks advance notice.

Copyright 1999 by The American Physical Society

Permission to quote excerpts or to reprint any figures or tables should be obtained directly from an author. The American Physical Society for its part hereby grants permission to quote excerpts and reprint up to 25 figures and/or tables from its journals with acknowledgment of the sources. Requests for permission to reprint in one publication more than 25 figures and/or tables from the totality of APS journals must be made in writing to the Associate Publisher (see address below). A \$10.00 fee per figure and/or table in excess of 25 will be charged. **Individual** teachers, students, researchers, and libraries in nonprofit institutions acting for them are permitted to make hard copies of articles for use in teaching or research, provided such copies are not sold. **Copying of articles for sale** by document delivery services or suppliers, or beyond the free copying allowed above, is permitted against payment of a copying fee. The current copying fee is \$15.00, per article, per copy. Express permission of APS is not required, except for purposes stated below, provided that the fee is paid through the Copyright Clearance Center, Inc. (CCC), 222 Rosewood Drive, Danvers, MA 01923. Contact the CCC for information on how to report copying and remit payments. **Reproduction** in a reprint collection, or for advertising or promotional purposes, or republication in any form requires permission of one of the authors and a license from APS. Such a license must be sought from Barbara Hicks, Associate Publisher, The American Physical Society, One Physics Ellipse, College Park, MD 20740-3844. Permission from the author must be sought and obtained from him or her directly.

Physical Review E (ISSN: 1063-651X; CODEN PLEEE8; printed in USA) is published monthly (on the 1st of each month) by The American Physical Society through the American Institute of Physics.

POSTMASTER: Send address changes to Physical Review E, Circulation and Fulfillment Department, AIP, Suite 1N01, 2 Huntington Quadrangle, Melville, NY 11747-4502. The 1999 subscription price is US\$1510 (US institutions). Periodicals postage rates are paid at Huntington Station, NY, and additional mailing offices.