

PHYSICAL REVIEW LETTERS

Providing rapid publication of short reports of important fundamental research, with coverage of major advances in all aspects of physics and of developments with significant consequences across subdisciplines.

The American Physical Society

One Physics Ellipse
College Park, MD 20740-3844

President D. ALLAN BROMLEY
President-Elect ANDREW M. SESSLER
Vice-President JEROME I. FRIEDMAN
Executive Officer JUDY R. FRANZ
Treasurer THOMAS J. MCILRATH
Editor-in-Chief MARTIN BLUME

APS Editorial Office

1 Research Road, Box 9000
Ridge, NY 11961-9000
Phone: (516) 591-4060
Fax: (516) 591-4141
Email: prl@aps.org
Web: <http://publish.aps.org/>

APS Membership Department

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

AIP Circulation & Fulfillment

500 Sunnyside Boulevard
Woodbury, NY 11797-2999
Phone: (516) 576-2270, (800) 344-6902
Fax: (516) 349-9704
Email: subs@aip.org

Editors

JACK SANDWEISS
GEORGE BASBAS STANLEY G. BROWN GENE L. WELLS

Associate Editor

BRANT M. JOHNSON

Senior Assistant Editors

JEROME MALENFANT
REINHARDT B. SCHUHMAN

Assistant Editor

ANNE MICHELSEN

Senior Assistants to the Editors

ROBERT GARISTO
CHRISTOPHER WESSELBORG

Assistant to the Editors

SAMI MITRA

Senior Editorial Assistants

MARIE KAPLAN
PAUL K. SHERARD

Adjunct Associate Editors

RAYMOND E. GOLDSTEIN
ZACHARY H. LEVINE

Editorial Board (Divisional Associate Editors)

JACK SANDWEISS, *Chairman*

S. P. BOUGHN, J. L. FRIEDMAN, E. VISHNIAC (*Astrophysics*)

E. ARIMONDO, M. R. FLANNERY, R. A. HOLT,

P. ZOLLER (*Atomic, Molecular, and Optical Physics*)

P. M. CHAMPION, M. WORTIS (*Biological Physics*);

W. H. MILLER (*Chemical Physics*)

G. BASTARD, S. CHAKRAVARTY, D. ESTEVE, A. L. FETTER, Z. FISK, G. GREST, Y. IMRY,

J. D. JOANNOPOULOS, D. C. JOHNSTON, G. KOTLIAR, A. H. MACDONALD, S. MAEKAWA,

M. A. MOORE, M. A. REED, M. SCHEFFLER, D. VOLLHARDT, T. A. WITTEN, JR.,

W. ZWERGER (*Condensed Matter Physics*)

G. AHLERS, P. G. DE GENNES (*Fluid Dynamics*)

F. BATES, M. MUTHUKUMAR (*High Polymer Physics*)

K. C. KULANDER, J. C. MILLER (*Laser Science*)

W. F. EGELHOFF, JR., F. J. HIMPEL, S. M. SHAPIRO, C. VAN DE WALLE,

A. ZANGWILL (*Materials Physics*)

G. FAI, R. V. JANSSENS, B. KEISTER, R. P. REDWINE, P. RING, W. A. ZAIC (*Nuclear Physics*)

R. S. CHIVUKULA, C. MICHAEL, J. E. PILCHER, J. POLCHINSKI, G. STERMAN,

D. WYLER (*Particles and Fields*)

R. SIEMANN (*Physics of Beams*)

T. M. ANTONSEN, J. P. DAHLBURG, R. LOVELACE, M. MAUEL (*Plasma Physics*)

F. LALOE (*Foundations of Quantum Mechanics*)

Letters intended for this Journal must be short and self-contained. A description of editorial Policies and Procedures is published annually in the first July issue. Instructions for manuscript preparation are given in the Information for Contributors published in the first issue of each volume. Rules pertaining to allowed length and memos regarding production requirements appear at the end of some issues of the Journal.

Manuscripts should be submitted in quadruplicate to the Editorial Office. Alternatively their computer files, if prepared in an appropriate format, may be submitted electronically (see <http://publish.aps.org/ESUB/> or inquire at prltex@aps.org). Submission by fax is not appropriate. Submission is a representation that the work is not being considered for publication elsewhere. Authors should provide indexing codes according to PACS—1996 (available on our Web server, via ftp to aps.org in the /pub/pacs directory, and in print from the Editorial Office). A signed APS **copyright-transfer** form (to take effect upon publication) must be provided, and should be included with the submission (the transfer form appears at the end of the 26 May 1997 issue of the Journal, and is available on our Web server, via ftp to aps.org, and in print from the Editorial Office). After publication, **payment** of a fee of \$460 for each Letter and \$160 for each Comment or Reply is requested from the authors to defray editorial and production expenses; for properly prepared electronic submissions, the fees requested are \$380 and \$130, respectively. **Reprints** may be ordered at an additional cost. **Proofs** are normally sent to authors.

Nonmember subscribers should direct correspondence concerning **subscriptions**, foreign-delivery prices and options, renewals, missing or damaged copies, and changes of address, as well as single-copy orders, to the Circulation and Fulfillment Division, AIP. The nonmember subscription **price** (January–December 1997) for U.S. and possessions is \$1970. **APS members** should address subscription inquiries to the APS Membership Department. For **change of address** allow six weeks advance notice. Send both old and new addresses and, if possible, include an address label from a recent issue. Also available are **microfiche** subscriptions, **microfilm** volumes, and **indexes**. An **online version** of the journal is available. See our Web server for information, or inquire at assocpub@aps.org.

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 \$10.00, 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 Mina Chung, Associate Publisher, The American Physical Society, One Physics Ellipse, College Park, MD 20740-3844. Permission of the author must be sought and obtained from him or her directly.

Physical Review Letters (ISSN: 0031-9007) is published weekly by The American Physical Society. Copyright 1997 by The American Physical Society.

POSTMASTER: Send address changes to: American Institute of Physics, 500 Sunnyside Boulevard, Woodbury, New York 11797-2999.

Periodicals postage paid at Woodbury, NY, and additional mailing offices.