PHYSICAL REVIEW D

PARTICLES, FIELDS, GRAVITATION, AND COSMOLOGY

Editors

ERICK J. WEINBERG **D. L. NORDSTROM**

Associate Editors

JONATHAN A. BAGGER **SALLY DAWSON** **ROBERT D. PISARSKI**

Assistant to the Editors

JOHN RIPKA

EDITORIAL BOARD

Term ending 31 December 1999

BRIAN R. GREENE
MARK SREDNICKI
DOUG TOUSSAINT
ROBERT M. WALD

Term ending 31 December 2000

KEIJO KAJANTIE
V. A. RUBAKOV
DAVISON E. SOPER

Term ending 31 December 2001

DAVID G. CASSEL
ANEESH V. MANOHAR
MICHAEL E. PESKIN
CLIFFORD M. WILL

Published through the
American Institute of Physics
by
The American Physical Society

President
JEROME I. FRIEDMAN

President-Elect
JAMES S. LANGER

Vice-President
GEORGE H. TRILLING

Executive Officer
JUDY R. FRANZ

Treasurer
THOMAS J. MCILRATH

Editor-in-Chief
MARTIN BLUME

Editorial Office:

The American Physical Society
1 Research Road, Box 9000
Ridge, NY 11961-9000

Phone: (516) 591-4040
Fax: (516) 591-4141
Email: prd@aps.org
Web: http://publish.aps.org/
Submissions: prdtex@aps.org or
http://publish.aps.org/ESUB/

Production and distribution by

American Institute of Physics
500 Sunnyside Boulevard
Woodbury, NY 11797-2999

Phone: (516) 576-2200
Fax: (516) 349-1802
Email: prd15@aip.org

Manuscripts may be **submitted** electronically if in appropriate format (see http://publish.aps.org/ESUB/ or inquire at prdtex@aps.org). Alternatively, send three 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 17 August 1998 issue of *Physical Review Letters* and is available on our Web server. Information for contributors may be found 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, One Physics Ellipse, College Park, MD 20740-3844 [phone: (301) 209-3280; fax: (301) 209-0867; email: membership@aps.org]. **Nonmembers** should address subscription inquiries to the AIP Circulation and Fulfillment Division, 500 Sunnyside Boulevard, Woodbury, NY 11797-2999 [phone: (516) 576-2270 or (800) 344-6902; fax: (516) 349-9704; email: subs@aip.org]. 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 Mina Chung, 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 D (ISSN: 0556-2821; CODEN PRVDAQ; printed in USA) is published twice a month (on the 1st and the 15th of each month) by The American Physical Society through the American Institute of Physics.

POSTMASTER: Send address changes to Physical Review D, Circulation and Fulfillment Department, AIP, 500 Sunnyside Boulevard, Woodbury, NY 11797-2999. The 1999 subscription price is US$2445 (US institutions). Periodicals postage rates are paid at Woodbury, NY, and additional mailing offices.