

PHYSICAL REVIEW LETTERSTM

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.

Editors JACK SANDWEISS GEORGE BASBAS ROBERT GARISTO REINHARDT B. SCHUHMAN Associate Editors BRANT M. JOHNSON SAMINDRANATH MITRA Senior Assistant Editors MANOLIS ANTONOYIANNAKIS DONAVAN HALL SAAD E. HEBBOUL JEROME MALENFANT YONKO MILLEV DANIEL UCKO Assistant Editors ABHISHEK AGARWAL SONJA GRONDALSKI VALERIE L. MILLER JOHN RIPKA JANE THROWE Consulting Editor STANLEY G. BROWN Adjunct Associate Editors KARSTEN KRUSE FRANK NARDUCCI DENIZ VAN HEIJNSBERGEN	Editorial Board (Divisional Associate Editors) JACK SANDWEISS, Chairman <i>Astrophysics</i> N. ANDERSSON, R. CALDWELL, R. COWSIK, E. POISSON, M. VISSER <i>Atomic, Molecular, and Optical Physics</i> S.M. BARNETT, M. CAPONE, C.L. COCKE, M. FLEISCHHAUER, M. INGUSCIO, K. MOLMER, J.-M. RAIMOND <i>Biological Physics</i> F. MACKINTOSH <i>Chemical Physics</i> G. PACCHIONI <i>Condensed Matter Physics</i> Y. AVISHAI, M. BAYER, J. BEAMISH, J. BLOCH, R.A. BLYTHE, C.H. BOOTH, D. BOYANOVSKY, N. BRILLIANTOV, P.W. BROUWER, H. CHATÉ, S. COPPERSMITH, H.D. DREW, K. ENSSLIN, H.A. FERTIG, A. FUJIMORI, Y. GEFFEN, K. INGERSANT, D.C. JOHNSTON, P. JUNG, A.B. KUKLOV, J. MACHTA, S. MAJUMDAR, R. MERLIN, H. MUNEKATA, P. PRELOVSEK, N.V. PROKOFEV, J. RIERA, D. SEN, A.J. SIEVERS, S.B. SINNOTT, A.K. SOPER, C.M. SOUKOULIS, N.A. SPALDIN, M. VOJTA, F. VON OPPEN, S. WHITE <i>Fluid Dynamics</i> L. BIFERALE, P. TABELING <i>Laser Science</i> H.J. CARMICHAEL, T. ELSAESSER, B.A. MALOMED, P.W. MILONNI, M.G. RAYMER <i>Materials Physics</i> A. BRATAAS, U. DIEBOLD, R. FEENSTRA, J. NEATON, M. PAYNE, S.K. STREIFFER, H. ZABEL <i>Nuclear Physics</i> D.J. DEAN, J.C. HARDY, N. HERRMANN, V. KOCH, H. SAKAI, J. WAMBACH <i>Particles and Fields</i> P. DE FORCRAND, A. DONNACHIE, M. DREES, H.J. FRISCH, A.A. TSEYTLIN, R.R. VOLKAS <i>Physics of Beams</i> I. BEN ZVI <i>Plasma Physics</i> T.C. LUCE, J.-P. MATTE, W. MATTHAEUS, P.A. NORREYS, H. WEITZNER <i>Polymer Physics</i> J. DE PABLO, J. DOUGLAS Foundations of Quantum Mechanics R. JOZSA Quantum Information D. BRUSS, F. K. WILHELM	American Physical Society Officers <i>President</i> ROBERT L. BYER <i>President-Elect</i> MICHAEL S. TURNER <i>Vice-President</i> MALCOLM R. BEASLEY <i>Past President</i> BARRY C. BARISH <i>Editor in Chief</i> GENE D. SPROUSE <i>Treasurer and Publisher</i> JOSEPH W. SERENE <i>Executive Officer</i> KATE P. KIRBY One Physics Ellipse College Park, MD 20740-3844 APS Editorial Office Directors <i>Editorial</i> DANIEL T. KULP <i>Journal Information Systems</i> MARK D. DOYLE <i>Journal Operations</i> CHRISTINE M. GIACCONE 1 Research Road Ridge, NY 11961-2701 Phone: (631) 591-4060 Fax: (631) 591-4141 Email: prl@aps.org Web: http://publish.aps.org/ Submissions: prltex@aps.org or http://authors.aps.org/ESUB/ 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 Suite 1NO1 2 Huntington Quadrangle Melville, NY 11747-4502 Toll free: (800) 344-6902 Phone: (516) 576-2270 Fax: (516) 349-9704 Email: subs@aps.org
---	--	--

Letters intended for this journal must be short and self-contained. A description of editorial Policies and Practices is published in the first January and July issues and can be found on our Web server. Instructions for manuscript preparation are given in the Information for Contributors published in the first issue of each volume and available on our Web server.

Manuscripts should be **submitted** electronically in acceptable format (see <http://authors.aps.org/ESUB/> or inquire at prltex@aps.org). If this is not possible, send one copy 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. Authors should provide indexing codes according to the PACS scheme (available at <http://publish.aps.org/PACS/>). An executed APS **copyright-transfer** form (effective only on acceptance for publication) must be provided; the form is available via our Web submission server and via <http://authors.aps.org/>.

To help defray editorial and production expenses, authors of published Letters are expected to pay a **publication charge** of \$670 (\$235 for a Comment or Reply). Charges are higher (\$825 for a Letter, \$300 for a Comment or Reply) for those which are not submitted in an acceptable electronic format. 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 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, and single-copy orders should be addressed to the APS Membership Department. **Institutional subscribers** should address subscription inquiries to APS Subscription Services. For address changes please send both old and new addresses, and if possible, send the mailing label from a recent issue.

Copyright © 2012 American Physical Society. All rights reserved.
Physical Review LettersTM is a trademark of the American Physical Society.

Rights and Permissions: See <http://publish.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 from the Associate Publisher, American Physical Society, One Physics Ellipse, College Park, MD 20740-3844; email: assocpub@aps.org.

Other Use: Permission is granted to quote from the journal with the customary acknowledgment of the source. Permission must be sought from the APS Associate Publisher to reproduce a figure, table, or excerpt of an Article. 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 LettersTM [ISSN: 0031-9007 (print), 1079-7114 (online); CODEN PRLTAO; printed in USA] is published weekly by the American Physical Society, 1 Research Road, Ridge, NY 11961-2701.

POSTMASTER: Send address changes to Physical Review LettersTM, APS Subscription Services, Suite 1NO1, 2 Huntington Quadrangle, Melville, NY 11747-4502. The 2012 print + online base price is \$3250. Periodicals postage rates are paid at Huntington Station, NY, and additional mailing offices.