

VOLUME 31 PART 5 OCTOBER 2011

# *Ergodic theory and dynamical systems*

MANAGING EDITORS

M. Pollicott and S. van Strien, Mathematics Institute, University of Warwick,  
Coventry CV4 7AL, UK

EXECUTIVE EDITORS

M. Boyle, University of Maryland  
F. Ledrappier, University of Notre Dame  
M. Viana, IMPA, Rio de Janeiro

SURVEY EDITOR

A. B. Katok, The Pennsylvania State University, University Park

**CAMBRIDGE**  
UNIVERSITY PRESS

# *Ergodic theory and dynamical systems*

## MANAGING EDITORS

M. Pollicott    S. van Strien  
etds@maths.warwick.ac.uk

## EXECUTIVE EDITORS

M. Viana  
viana@impa.br

F. Ledrappier  
ledrappier.1@nd.edu

M. Boyle  
mmb@math.umd.edu

## SURVEY EDITOR

A. B. Katok  
katok\_a@math.psu.edu

## EDITORIAL BOARD

A. Avila (C.N.R.S., Jussieu)  
D. Dolgopyat (University of Maryland)  
J. Franks (Northwestern University)  
H. Furstenberg (Hebrew University of Jerusalem)  
V. Kaloshin (University of Maryland)  
D. Kleinbock (Brandeis University)  
E. Lindenstrauss (Hebrew University of Jerusalem)  
C. Liverani (University of Rome II)  
S. Mozes (Hebrew University of Jerusalem)

Ya. B. Pesin (Pennsylvania State University)  
D. Ruelle (IHES, Bures-sur-Yvette)  
N. Simányi (University of Alabama, Birmingham)  
M. Tsujii (Kyushu University)  
A. M. Vershik (Steklov Mathematical Institute,  
St. Petersburg)  
A. Wilkinson (Northwestern University)  
J.-C. Yoccoz (Collège de France)

*Ergodic Theory and Dynamical Systems* provides a focus for this important and rapidly developing area of mathematics and an opportunity to bring together many major contributors in the field which are, at the moment, scattered over a large number of non-specialist periodicals.

Dynamical methods have proved to be a powerful unifying force in mathematics in recent decades, and they are now beginning to be felt in allied subjects such as physics and biology. *Ergodic Theory and Dynamical Systems* acts as a forum for central problems of differential geometry, number theory, operator algebras, topological, differential and symbolic dynamics, and celestial and statistical mechanics.

Expository survey articles and conference proceedings will be included from time to time and reviews of relevant books will also be published.

**Copying:** This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA ([www.copyright.com](http://www.copyright.com)). Organizations in the USA who are also registered with CCC may therefore copy material (beyond the limits permitted by sections 107 and 108 of US copyright law) subject to payment to CCC. This consent does not extend to multiple copying for promotional or commercial purposes.

Organizations authorized by the Copyright Licensing Agency may also copy material subject to the usual conditions. For all other use, permission should be sought from Cambridge or the American branch of Cambridge University Press.

**Internet Access:** This journal is included in the Cambridge Journals Online service which can be found at <http://journals.cambridge.org>. For further information on other Press titles access <http://www.cambridge.org>.

**Subscriptions:** *Ergodic Theory and Dynamical Systems* (ISSN 0143-3857) is published six times a year in February, April, June, August, October and December by Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 8RU, UK/Cambridge

University Press, 32 Avenue of the Americas, New York, N.Y. 10013-2473. The subscription price (excluding VAT) of volume 31, 2011 which includes print and electronic access, is £824.00 (US\$1470.00 in USA, Canada and Mexico). The electronic-only price available to institutional subscribers is £742.00 (US\$1328.00 in USA, Canada and Mexico). Single parts cost £144.00 net (US\$257.00 in USA, Canada and Mexico). Prices include delivery by air where appropriate. Members of the London Mathematical Society and American Mathematical Society may subscribe for £215.00 (US\$370.00). Six parts form a volume. EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. Orders, which must be accompanied by payment, may be sent to a book-seller, subscription agent or direct to the publishers: Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 8RU or, in the USA, Canada and Mexico, Cambridge University Press, Journals Fulfillment Department, 100 Brook Hill Drive, West Nyack, New York 10994-2133. Japanese prices for institutions are available from Kinokuniya Company Ltd, P.O. Box 55, Chitose, Tokyo 156, Japan. Periodicals postage is paid at New York, NY and additional mailing offices. POSTMASTER: send address changes in USA, Canada and Mexico to *Ergodic Theory and Dynamical Systems*, Cambridge University Press, 100 Brook Hill Drive, West Nyack, New York 10994-2133.

*Printed in the United Kingdom at the University Press, Cambridge*

© Cambridge University Press 2011

PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE

The Pitt Building, Trumpington Street, Cambridge CB2 1RP, United Kingdom

CAMBRIDGE UNIVERSITY PRESS

The Edinburgh Building, Cambridge CB2 8RU, United Kingdom  
32 Avenue of the Americas, New York, NY 10013-2473, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

C/O Orense, 4, planta 13, 28020 Madrid, Spain

Dock House, The Waterfront, Cape Town 8001, South Africa