## CAMBRIDGE

## JOURNALS

# Mathematika

Produced, marketed and distributed for The London Mathematical Society

Managing Editor Alex Sobolev, University College London, United Kingdom

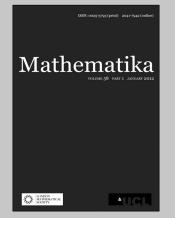
Mathematika publishes both pure and applied mathematical articles and has done so continuously since its founding by Harold Davenport in the 1950s. The traditional emphasis has been towards the purer side of mathematics but applied mathematics and articles addressing both aspects are equally welcome. The journal, which is owned by University College London and published by the London Mathematical Society, will continue to publish research papers of the very highest mathematical quality. All articles, including the full archive dating back to 1954, are available electronically via Cambridge Journals Online.

Price information is available at: http://journals.cambridge.org/mtk

## **Free email alerts**

Keep up-to-date with new material – sign up at http://journals.cambridge.org/mtk-alerts

For free online content visit: http://journals.cambridge.org/mtk



*Mathematika* is available online at: http://journals.cambridge.org/mtk

## To subscribe contact Customer Services

in Cambridge: Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

in New York: Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions\_newyork@cambridge.org

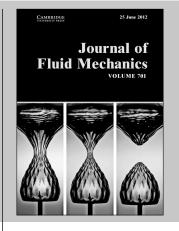


# Journal of Fluid Mechanics

#### Editor

M. G. Worster, University of Cambridge, UK

Journal of Fluid Mechanics is the leading international journal in the field and is essential reading for all those concerned with developments in fluid mechanics. It publishes authoritative articles covering theoretical, computational and experimental investigations of all aspects of the mechanics of fluids. Each issue contains papers on both the fundamental aspects of fluid mechanics, and their applications to other fields such as aeronautics, astrophysics, physiology, chemical and mechanical engineering, hydraulics, meteorology, oceanography, geology, acoustics and combustion.



Journal of Fluid Mechanics is available online at: http://journals.cambridge.org/flm

## To subscribe contact Customer Services

in Cambridge: Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

in New York: Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions\_newyork@cambridge.org

Price information is available at: http://journals.cambridge.org/flm

## Free email alerts

Keep up-to-date with new material – sign up at http://journals.cambridge.org/flm-alerts

> For free online content visit: http://journals.cambridge.org/flm



# Mathematical Structures in Computer Science

## **Editor-in-Chief**

G. Longo, CNRS and Ecole Normale Supérieure, Paris, France

Mathematical Structures in Computer Science is a journal of theoretical computer science which focuses on the application of ideas from the structural side of mathematics and mathematical logic to computer science. The journal aims to bridge the gap between theoretical contributions and software design, publishing original papers of a high standard and broad surveys with original perspectives in all areas of computing, provided that ideas or results from logic, algebra, geometry, category theory or other areas of logic and mathematics form a basis for the work.



Mathematical Structures in Computer Science is available online at: http://journals.cambridge.org/msc

### To subscribe contact Customer Services

in Cambridge: Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

in New York: Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions\_newyork@cambridge.org

Price information is available at: http://journals.cambridge.org/msc

## **Free email alerts**

Keep up-to-date with new material – sign up at http://journals.cambridge.org/msc-alerts

For free online content visit: http://journals.cambridge.org/msc



## Probability in the Engineering and Informational Sciences

#### Editor

Sheldon M. Ross, University of Southern California, USA

The primary focus of the journal is on stochastic modelling in the physical and engineering sciences, with particular emphasis on queueing theory, reliability theory, inventory theory, simulation, mathematical finance and probabilistic networks and graphs. Papers on analytic properties and related disciplines are also considered, as well as more general papers on applied and computational probability, if appropriate. Readers include academics working in statistics, operations research, computer science, engineering, management science and physical sciences as well as industrial practitioners engaged in telecommunications, computer science, financial engineering, operations research and management science.



Probability in the Engineering and Informational Sciences is available online at: http://journals.cambridge.org/pes

### To subscribe contact Customer Services

in Cambridge: Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

in New York: Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions\_newyork@cambridge.org

## **Free email alerts**

Keep up-to-date with new material – sign up at journals.cambridge.org/register

For free online content visit: http://journals.cambridge.org/pes



## Proceedings of the Edinburgh Mathematical Society

Published for The Edinburgh Mathematical Society

## **Editorial Management**

The Secretary, ICMS, Edinburgh, UK

The Edinburgh Mathematical Society was founded in 1883 and over the years, has evolved into the principal society for the promotion of mathematics research in Scotland. The Society has published its Proceedings since 1884. This journal contains research papers on topics in a broad range of pure and applied mathematics, together with a number of topical book reviews.

## Price information

is available at: http://journals.cambridge.org/pem

## **Free email alerts**

Keep up-to-date with new material – sign up at http://journals.cambridge.org/pem-alerts

For free online content visit: http://journals.cambridge.org/pem

#### VOLUME 47 (SERIES II) PART 2 JUNE 2004

Proceedings of the Edinburgh Mathematical Society

#### CAMBRIDGE UNIVERSITY PRESS

Proceedings of the Edinburgh Mathematical Society is available online at: http://journals.cambridge.org/pem

## To subscribe contact Customer Services

in Cambridge: Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

in New York: Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions\_newyork@cambridge.org



# Combinatorics, Probability & Computing

#### **Editor-in-Chief**

Béla Bollobás, DPMMS, Cambridge, UK; University of Memphis, USA

Published bimonthly, *Combinatorics, Probability* & *Computing* is devoted to the three areas of combinatorics, probability theory and theoretical computer science. Topics covered include classical and algebraic graph theory, extremal set theory, matroid theory, probabilistic methods and random combinatorial structures; combinatorial probability and limit theorems for random combinatorial structures; the theory of algorithms (including complexity theory), randomised algorithms, probabilistic analysis of algorithms, computational learning theory and optimisation. <text><text><text><text><text><text><text><text><text>

Combinatorics, Probability & Computing is available online at: http://journals.cambridge.org/cpc

### To subscribe contact Customer Services

in Cambridge: Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

in New York: Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions\_newyork@cambridge.org

Price information is available at: http://journals.cambridge.org/cpc

**Free email alerts** Keep up-to-date with new material – sign up at http://journals.cambridge.org/cpc-alerts

For free online content visit: http://journals.cambridge.org/cpc



#### INSTRUCTIONS FOR CONTRIBUTORS

#### *Editorial policy* The journal publishes *research papers* and *survey papers*.

**Research papers** may be in any area of applied mathematics, with especial emphasis on *new mathematical ideas relevant* to modelling and analysis in modern science and technology and the development of interesting mathematical methods of wide applicability. There is no restriction in the scope or style of mathematics as long as the content is presented to be as accessible as possible to the entire community of mathematicians and mathematical scientists. This applies in particular to the Introduction and conclusion. Standard mathematical techniques will only be published if they are associated with novel applications or lead to substantial advances in established problem areas.

Survey papers aim to bridge the gap between academia and industry by presenting mathematical methods relevant to industry in its broadest sense, ranging from manufacturing to finance, telecommunications to biotechnology, and describing industrial problems of interest to mathematicians. Coverage includes reviews of techniques in relation to industrial application, new problem areas for which mathematical models and techniques are not yet available, comparison of solution methods, and descriptions of modelling approaches.

*Submission of manuscripts* Submission of a paper is taken to imply that it has not been previously published and that it is not being considered for publication elsewhere. Authors of articles published in the journal assign copyright to Cambridge University Press (with certain rights reserved) and you will receive a copyright assignment form for signature on acceptance of your paper.

Manuscripts for consideration for the European Journal of Applied Mathematics should be submitted electronically as a pdf file, using the <u>Editorial Manager</u> system. The system will allow authors to benefit from faster review and earlier online publication. When and if the paper has been accepted for publication, we will require a pdf file of the accepted version, along with the source files that created it: these should be submitted to the publisher via the Editorial Manager system. Authors who are unable to do so should contact the <u>editorial office</u>.

Details of Style files The LaTeX 2e file ejm.cls and the guide ejm2egui.tex are available via anonymous ftp from the Cambridge University Press site at ftp://ftp.cambridge.org/pub/texarchive/journals/latex/ejm-cls. In case of difficulties obtaining these files, there is a help-line available via e-mail; please contact texline@cup.cam.ac.uk. The file readme.txt contains instructions.

Layout of manuscripts Papers must begin with an abstract of not more than 300 words; at the end of abstract authors must also include up to five 'key subject categories', listed in order of importance, taken from the Mathematics Subject Classification (see http://www.ams.org/mathscinet/msc/pdfs/classification2010.pdf). The paper should end with a brief concluding section. The SI system of units must be used throughout. There is no formal restriction on length.

*Figures* Figures should be produced and incorporated into the text using a standard \LaTeX compatible package; they will be reproduced  $\left\{ \text{with} \right\}$  the author's lettering: the preferred typeface is Times. They should be supplied at approximately the size of reproduction (maximum 134 mm  $\times$  180 mm). All figures must be cited in the text; they must include a legend, using the \caption command, which will in turn generate automatically a number that will be used for the citation.

Colour figures may be published at no charge in the online edition; a charge of £500 for each full page in colour will be levied for authors requesting colour reproduction in the printed version of the journal. All figures and reference to the figures must be equally comprehensible in both colour and greyscale.

Acceptable file types for figures are, EPS, TIFF or high resolution JPEG. In more detail:

Line artwork (graphs) Format: tif or eps Colour mode: black and white (also known as 1-bit) Resolution: 1200 dpi Combination artwork (line/tone) Format: tif or eps Colour mode: grayscale (also known as 8-bit) Resolution: 800 dpi Black and white halftone (photographs) Format: tif Colour mode: grayscale (also known as 8-bit) Resolution: 300 dpi Colour halftone artwork (photographs) Format: tif Colour mode: CMYK colour Resolution: 300 dpi

*References and Citations in the text* The ejm.cls file supports various citation styles; more details are in the guide. The default is that references are numbered in square brackets. References should be listed in alphabetical order at the end of the main text, within the bibliography environment. Please label each reference and use that label when citing. In this way, citation style will be taken care of automatically. Each reference should include, in the following order: author family name, initials; year in parentheses; article title; journal name (in italic), abbreviated in accordance with the *World List of Scientific Periodicals* (4th Edn); volume number (in bold); inclusive page numbers. If a book is being cited, then include author family name, initials, year in parentheses, title (in italic), publisher.

*Proof Reading* Typographical or factual errors only may be changed at proof stage. The publisher reserves the right to charge authors for correction of non-typographical errors. No page charge is made.

#### Incremental Publishing and DOIs

The European Journal of Applied Mathematics now publishes articles incrementally online (at Cambridge Journals Online: journals.cambridge.org) as soon as author corrections have been completed and before they join a printed issue. A new reference has now been added to the first page of the article in the journal catchline. This is the DOI–The Digital Object Identifier. This is a global publishing standard. A unique DOI number is created for each published item. It can be used for citation purposes instead of volume, issue and page numbers. It therefore suits the early citation of articles which are published on the web before they have appeared in a printed issue. <u>http://www.journals.cambridge.org/EJM</u>

Offprints No paper offprints will be supplied. Each author will have access to electronic offprints in pdf form.

#### COPYING

This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA (www.copyright.com). Organisations in the USA who are also registered with the 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.

Organisations authorised by the Copyright Licensing Agency may also copy material subject to the usual conditions.

IST Tear Sheet Service, 3501 Market Street, Philadelphia, Pennsylvania 19104, USA, is authorised to supply single copies of separate articles for private use only.

# European Journal of Applied Mathematics

VOLUME 23 · PART 6 · DECEMBER 2012

## CONTENTS

A model for dynamic communicators	659
ALEXANDER V. MANTZARIS AND DESMOND J. HIGHAM	
Asymptotic spreading of competition diffusion systems: The role of interspecific competitions	669
GUO LIN AND WAN-TONG LI	
Elastic waves in layered media: Two-scale homogenization approach	691
V. V. SHELUKHIN AND A. E. ISAKOV	
A continuum theory for one-dimensional self-similar elasticity and applications to wave propagation and diffusion	709
THOMAS M. MICHELITSCH, GÉRARD A. MAUGIN, MUJIBUR RAHMAN, SHAHRAM DEROGAR, ANDRZEJ F. NOWAKOWSKI AND FRANCK C. G. A. NICOLLEAU	
Grain boundaries in the Swift-Hohenberg equation	737
MARIANA HARAGUS AND ARND SCHEEL	
Structural stability for the resonant porous penetrative convection	761
YAN LIU	
Stability and Hopf bifurcation analysis for Nicholson's blowflies equation with non-local delay	777
RUI HU AND YUAN YUAN	
Derivation of the maximum voltage drop in power grids of integrated circuits with an array bonding package	797
M. AGUARELES AND J. DE HARO	

Printed in the United Kingdom by Latimer Trend & Co Ltd, Plymouth

Cambridge Journals Online For further information about this journal please go to the journal website at: journals.cambridge.org/ejm



MIX Paper from responsible sources FSC<sup>®</sup> C013436

