

Applied Mathematics

European Journal of

VOLUME 4 · PART 4 · DECEMBER 1993

CAMBRIDGE UNIVERSITY PRESS

EDITOR-IN-CHIEF

DR J. R. OCKENDON

Mathematical Institute, University of Oxford, 24-29 St Giles, Oxford, OX1 3LB, UK
EJAM@VAX.OX.AC.UK

ASSISTANT EDITOR

DR S. D. HOWISON

Mathematical Institute, University of Oxford, 24-29 St Giles, Oxford, OX1 3LB, UK
EJAM@VAX.OX.AC.UK
FAX 44 865 270515

EDITORS

PROF. A. FRIEDMAN

Institute for Mathematics and Applications, University of Minnesota, Minneapolis, MN 55455-0436, USA
FRIEDMAN%CSFSA.CS.UMN.EDU
@UMN-CS.CS.UMN.EDU

PROF. L. PELETIER

Universiteit Leiden, Department of Mathematics, Niels Bohrweg 1, Postbus 9512, NL-2300 RA Leiden, The Netherlands
PELETIER@RULCRI.LEIDENUNIV.NL

PROF. M. PRIMICERIO

Università degli Studi, Istituto Matematico U. Dini, Viale Morgagni 67/a, 50134 Firenze, Italy
FISMAT@FIIDG.FI.CNR.IT

ASSOCIATE EDITORS

PROF. G. I. BARENBLATT

DAMTP, University of Cambridge, Silver Street, Cambridge CB3 9EW

DR. A. K. HEAD

CSIRO (Materials Science and Technology), Locked Bag 33, Clayton, Victoria 3168, Australia
HEAD@RIVETT.MST.CSIRO.AU

PROF. B. J. MATKOWSKY

Department of Engineering Sciences and Applied Mathematics, The Technological Institute, Northwestern University, Evanston, Illinois 60201, USA
MAT@MAT.ESAM.NWU.EDU

PROF. M. CHIPOT

Université de Metz, Département de Mathématiques, Ile du Saulcy, 57045 Metz Cédex 01, France
CHIPOT@ARCTURUS.CIRIL.FR

PROF. K.-H. HOFFMANN

Lehrstuhl für Angewandte Mathematik, Institut für Angewandte Mathematik und Statistik, TU München, Dachauerstr 9a, 8000 München 2, Germany
HOFFMANN@APPL-MATH-TU-MUENCHEN.DE

PROF. V. V. PUKHNACHOV

Lavrentyev Institute of Hydrodynamics, Siberian Division of the Russian Academy of Sciences, Novosibirsk 630090, Russia

PROF. D. G. CRIGHTON

DAMTP, University of Cambridge, Silver Street, Cambridge CB3 9EW

PROF. A. DAMLAMIAN

Ecole Polytechnique, Centre de Mathématiques, Route de Saclay, 91128 Palaiseau, France
MATDAMLA@EARN.FRPOLY11

PROF. N. KENMOCHI

Department of Mathematics, Faculty of Education, Chiba University, Yayoi-cho 1-33, Chiba-shi 260, Japan

PROF. D. G. SCHAEFFER

Department of Mathematics, Duke University, Durham, North Carolina 27706, USA

PROF. C. M. ELLIOTT

Mathematics Subject Group, University of Sussex, Falmer, Brighton BN1 9QH
MMFC8@SYMA.SUSSEX.AC.UK

PROF. LI TATSJEN

Department of Mathematics, Fudan University, Shanghai, China

PROF. J. R. WILLIS

School of Mathematics, University of Bath, Claverton Down, Bath BA2 7AY
JRW@MATHS.BATH.AC.UK

PROF. J. HARPER

Department of Mathematics, Victoria University of Wellington, PO Box 600, Wellington, New Zealand
JOHN.HARPER@VUW.AC.NZ

PROF. S. LUCKHAUS

Institut für Angewandte Mathematik, Universität Bonn, Wegelerstrasse 6, 5300 Bonn, Germany
SFB256@DBNRHRZ1.BITNET

© CAMBRIDGE UNIVERSITY PRESS 1993

SUBSCRIPTIONS

European Journal of Applied Mathematics (ISSN 0956-7925) is published quarterly in March, June, September and December. The subscription price of Volume 4, 1993, is £96 net (USA, Canada and Mexico US \$176) post free; single parts cost £26 net (USA, Canada and Mexico US \$46) plus postage. Four parts form a volume. Orders, which must be accompanied by payment, may be sent to any bookseller, subscription agent or to the publisher: Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, or in the USA, Canada and Mexico to Cambridge University Press, The Journals Department, 40 West 20th Street, New York, NY 10011-4211, USA. Copies of the journal for subscribers in the USA, Canada and Mexico are sent by air to New York to arrive with minimum delay. Second class postage paid at New York, NY, and at additional mailing offices. Japanese prices for institutions (including ASP delivery) are available from Kinokuniya Company Ltd, P.O. Box 55, Chitose, Tokyo.

POSTMASTER: send address changes in USA, Canada and Mexico to *European Journal of Applied Mathematics*, Cambridge University Press, 110 Midland Avenue, Port Chester, New York, NY 10573-9864.

Claims for missing issues should be made immediately on receipt of the subsequent issue.