

Editors

Dr. Cedric Taylor
Department of Civil Engineering,
University of Wales,
Swansea, U.K.

Dr. Philip M. Gresho
Lawrence Livermore Laboratory,
University of California,
Livermore, California 94550, U.S.A.

Advisory Editors

Professor O. C. Zienkiewicz
Department of Civil Engineering,
University of Wales, Swansea, U.K.

Editorial Board

A. J. Baker

University of Tennessee, Department
of Engineering Science and Mechanics,
317 Perkins Hall, Knoxville,
Tennessee 37916, U.S.A.

M. Bercovier

Division of Applied Mathematics,
School of Applied Science and
Technology, The Hebrew University of
Jerusalem, Givot Ram, Jerusalem,
Israel.

P. Bettess

Department of Naval Architecture
and Shipbuilding,
University of Newcastle-upon-Tyne,
Queen Victoria Road,
Newcastle-upon-Tyne,
NE1 7RU, U.K.

G. de Vahl Davis

School of Mechanical and
Industrial Engineering,
The University of New South Wales,
P.O. Box 1, Kensington, N.S.W.,
Australia 2033.

J. Donea

Applied Mechanics Division,
Joint Research Centre,
Ispra Establishment,
21020 Ispra (Varese), Italy.

D. J. Evans

Department of Computer Studies,
University of Technology,
Loughborough, Leicestershire, U.K.

J. H. Ferziger

Mechanical Engineering Department,
Stanford University,
Stanford, CA 94305, U.S.A.

B. A. Finlayson

Dept. of Chemical Engineering, BF-10,
University of Washington, Seattle,
Washington 98195, U.S.A.

D. K. Gartling

Fluid Mechanics and Heat Transfer
Division 5511, Sandia Laboratories,
Albuquerque, New Mexico 87115,
U.S.A.

R. Glowinski

I.N.R.I.A.,
Domaine de Voluceau-Roquencourt,
B.P. 105,
78150 Le Chesnay, France.

M. Godet

I.N.S.A., Laboratoire de Mécanique
des Contacts Bt 113,
20 Avenue Albert Einstein,
69621 Villeurbanne Cedex, Lyons,
France.

D. F. Griffiths

Department of Mathematics,
University of Dundee,
Dundee DD1 4HN,
Scotland.

W. G. Habashi

Department of Mechanical Engineering,
Concordia University,
1455 de Maisonneuve Blvd. West,
Montreal, Quebec H3G 1M8, Canada.

A. Haugel

Electricite de France Direction, Des Etudes et
Recherches, 6 quai Watier, BP 49, 78401
Chatou Cedex, France

T. J. R. Hughes

Division of Applied Mechanics,
Stanford University,
Stanford, California 94305, U.S.A.

A. G. Hutton

Central Electricity Generating Board,
Berkeley Nuclear Laboratories,
Berkeley, Gloucestershire, U.K.

M. Kawahara

Chuo University,
Department of Civil Engineering,
Kasuga 1-chome 13, Bunkyo-ku,
Tokyo, Japan.

R. L. Lee

Lawrence Livermore Laboratory,
Atmospheric and Geophysical Science
Division, Physics Department,
University of California,
Livermore, California 94550, U.S.A.

B. P. Leonard

Department of Mechanical Engineering,
The University of Akron,
Akron, OH 44325, U.S.A.

J. N. Lillington

A.E.E. Winfrith,
Dorchester, Dorset
DT2 8DH, U.K.

U. Meissner

Universität Hannover,
Lehrstuhl für Stromungsmechanik,
Callinstr. 32, D-3000 Hannover,
West Germany.

K. W. Morton

Numerical Analysis Group,
Oxford University Computing
Laboratory, 8-11 Keble Road,
Oxford OX1 3QD, U.K.

J. T. Oden

Engineering Mechanics,
The University of Texas at Austin,
Austin, Texas 78712, U.S.A.

M. D. Olson

The University of British Columbia,
Department of Civil Engineering,
2075 Wesbrook Place, Vancouver,
British Columbia, Canada V6T 1W5.

G. F. Pinder

Princeton University,
Department of Civil Engineering,
School of Engineering/Applied
Science, Princeton,
New Jersey 08544, U.S.A.

J. N. Reddy

Virginia Polytechnic Institute and State
University, Department of Engineering
Science and Mechanics,
Norris Hall, Room 220, Blacksburg,
Virginia 24061, U.S.A.

P. J. Roache

Ecodynamics, Research Associates Inc.,
P.O. Box 8172, Albuquerque,
New Mexico 87108, U.S.A.

R. L. Sani

CIRES, Campus Box 449,
University of Colorado at Boulder,
Boulder, Colorado 80309, U.S.A.

S. F. Shen

Cornell University,
Sibley School of Mechanical and
Aerospace Engineering,
Upson and Grumman Halls,
Ithaca, New York 14853, U.S.A.

D. B. Spalding

Imperial College of Science and
Technology,
Department of Mechanical
Engineering, Exhibition Road,
London SW7 2BX, U.K.

R. L. Taylor

University of California,
Department of Civil Engineering,
Berkeley, California 94720, U.S.A.

J. R. Whiteman

Director, Institute of Computational
Mathematics, Brunel University,
Uxbridge, Middlesex UB8 3PH

K. H. Winters

Theoretical Physics Division, Harwell
Laboratory, Didcot, OXON, OX11 0RA, U.K.

M. Wolfshtein

Technion University,
Aero Engineering Department,
Haifa, Israel.

Advertising: For details contact—

U.K. and Europe: Michael J. Levermore, Advertising Manager, John Wiley & Sons Ltd., Baffins Lane, Chichester, Sussex, PO19 1UD, England (Telephone 0243 779777).

North America: Arthur C. Lipner, National Advertising Sales Representative, Weston Media Associates, 184 Judd Road, Easton, CT 06612, U.S.A. (Telephone 0101-203-261-2500).

International Journal for Numerical Methods in Fluids (ISSN 0271-2091) is published monthly by John Wiley & Sons Limited, Baffins Lane, Chichester, Sussex, England. 1987 subscription prices: to U.K. £195.00, elsewhere U.S. \$350.00. Second class postage paid at Jamaica, NY 11431. Air Freight and mailing in the U.S.A. by Publications Expediting Services Inc., 200 Meacham Avenue, Elmont, NY 11003. Orders should be addressed to: Subscriptions Department, John Wiley & Sons Limited, Baffins Lane, Chichester, Sussex, PO19 1UD, England. Copyright © 1987 by John Wiley & Sons Ltd. Typeset in India by Thomson Press (India) Limited. Printed and bound in Great Britain by The Universities Press (Belfast) Ltd.

U.S.A. Postmasters: Send address changes to *International Journal for Numerical Methods in Fluids*, c/o Publications Expediting Services Inc., 200 Meacham Avenue, Elmont, NY 11003.