Acta Numerica

Volume 8

1999

Acta Numerica 1999

Managing editor

A. Iserles
DAMPT, University of Cambridge, Silver Street
Cambridge CB3 9EW, England

Editorial Board

C. de Boor, *University of Wisconsin, Madison, USA*
F. Brezzi, *Instituto di Analisi Numerica del CNR, Italy*
J. C. Butcher, *University of Auckland, New Zealand*
P. G. Ciarlet, *Université Paris VI, France*
G. H. Golub, *Stanford University, USA*
H. B. Keller, *California Institute of Technology, USA*
H.-O. Kreiss, *University of California, Los Angeles, USA*
K. W. Morton, *University of Oxford, England*
M. J. D. Powell, *University of Cambridge, England*
R. Temam, *Université Paris-Sud, France*

Acta Numerica

Volume 8 1999

CAMBRIDGE
UNIVERSITY PRESS

PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE
The Pitt Building, Trumpington Street, Cambridge, United Kingdom

CAMBRIDGE UNIVERSITY PRESS
The Edinburgh Building, Cambridge CB2 2RU, UK www.cup.cam.ac.uk
40 West 20th Street, New York, NY 10011–4211, USA www.cup.org
10 Stamford Road, Oakleigh, Melbourne 3166, Australia
Ruiz de Alarcón 13, 28014 Madrid, Spain

© Cambridge University Press 1999

This book is in copyright. Subject to statutory exception
and to the provisions of the relevant collective licensing agreements,
no reproduction of any part may take place without
the written permission of Cambridge University Press.

First published 1999

Printed in the United Kingdom at the University Press, Cambridge

Typeface Computer Modern 11/13pt *System* LaTeX [UPH]

A catalogue record for this book is available from the British Library

Library of Congress Cataloguing in Publication data available

ISBN 0-521-77088-2 hardback
ISSN 0962-4929

Contents

Numerical relativity: challenges for computational science 1
Gregory B. Cook and Saul A. Teukolsky

Radiation boundary conditions for the numerical simulation of waves 47
Thomas Hagstrom

Numerical methods in tomography 107
Frank Natterer

Approximation theory of the MLP model in neural networks 143
Allan Pinkus

An introduction to numerical methods for stochastic differential equations 197
Eckhard Platen

Computation of pseudospectra 247
Lloyd N. Trefethen