

JOURNAL OF COMPUTATIONAL PHYSICS

Editor

Greтар Tryggvason

Worcester Polytechnic Institute, Worcester, Massachusetts

Associate Editors

Rémi Abgrall

Université Bordeaux I
Talence, France

Nikolaus A. Adams

Lehrstuhl für Aerodynamik
Technische Universität München
Garching, Germany

Alvin Bayliss

Northwestern University
Evanston, Illinois

John P. Boyd

University of Michigan
Ann Arbor, Michigan

Shiyi Chen

The Johns Hopkins University
Baltimore, Maryland

Haecheon Choi

Seoul National University
Seoul, S. Korea

Pierre Degond

Université Paul Sabatier (Toulouse)
Toulouse, France

Ron Fedkiw

Stanford University
Stanford, California

George Karniadakis

Brown University Providence
Rhode Island

Dana A. Knoll

Los Alamos National Laboratory
Los Alamos, New Mexico

Barry Koren

Centre for Mathematics and
Computer Science
Amsterdam, The Netherlands

Petros Koumoutsakos

Swiss Federal Institute of Technology
Zürich, Switzerland

William R. Martin

University of Michigan
Ann Arbor, Michigan

Rajat Mittal

Johns Hopkins University,
Baltimore, Maryland

Parviz Moin

Stanford University
Stanford, California

Stanley J. Osher

University of California
Los Angeles, California

Annick Pouquet

National Center for
Atmospheric Research
Boulder, Colorado

Jianxian Qiu

Nanjing University
Nanjing, P.R. China

Tamar Schlick

New York University
New York, New York

John Shadid

Sandia National Laboratories
Albuquerque, USA

Piotr K. Smolarkiewicz

National Center for
Atmospheric Research
Boulder, Colorado

John Strain

University of California
Berkeley, California

Huazhong Tang

Peking University
Peking, P.R. China

Tao Tang

The Hong Kong Baptist University
Kowloon Tong
Hong Kong

Anna-Karin Tornberg

The Royal Swedish Academy of
Sciences (KVA)
Stockholm, Sweden

Eli Turkel

Tel Aviv University
Tel Aviv, Israel

Evgenii V. Vorozhtsov

Institute of Theoretical and
Applied Mechanics
Novosibirsk, Russia

Feng Xiao

Institute of Mechanics, Chinese
Academy of Sciences
Beijing, China

Stéphane Zaleski

Université Pierre et Marie Curie
Paris, France

Editors Emeriti: Jeremiah U. Brackbill

John Killeen

Phil L. Roe

Aims and scope of the journal: The mission of the *Journal of Computational Physics* is to publish material that will assist in the reliable and accurate solution of scientific problems by numerical computation.

Publication information: *Journal of Computational Physics* (ISSN 0021-9991). For 2010, volume 229 is scheduled for publication. Subscription prices are available upon request from the Publisher or from the Elsevier Customer Service Department nearest you or from this journal's website (<http://www.elsevier.com/locate/jcp>). Further information is available on this journal and other Elsevier products through Elsevier's website (<http://www.elsevier.com>). Subscriptions are accepted on a prepaid basis only and are entered on a calendar year basis. Issues are sent by standard mail (surface within Europe, air delivery outside Europe). Priority rates are available upon request. Claims for missing issues should be made within six months of the date of dispatch.

Orders, claims, and journal enquiries: please contact the Elsevier Customer Service Department nearest you:

St. Louis: Elsevier Customer Service Department, 3251 Riverport Lane, Maryland Heights, MO 63043, USA; phone: (877) 8397126 [toll free within the USA]; (+1) (314) 4478878 [outside the USA]; fax: (+1) (314) 4478077; e-mail: JournalCustomerService-usa@elsevier.com

Oxford: Elsevier Customer Service Department, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK; phone: (+44) (1865) 843434; fax: (+44) (1865) 843970; e-mail: JournalsCustomerServiceEMEA@elsevier.com

Tokyo: Elsevier Customer Service Department, 4F Higashi-Azabu, 1-Chome Bldg, 1-9-15 Higashi-Azabu, Minato-ku, Tokyo 106-0044, Japan; phone: (+81) (3) 5561 5037; fax: (+81) (3) 5561 5047; e-mail: JournalsCustomerServiceJapan@elsevier.com

Singapore: Elsevier Customer Service Department, 3 Killiney Road, #08-01 Winsland House I, Singapore 239519; phone: (+65) 6349 0222; fax: (+65) 6733 1510; e-mail: JournalsCustomerServiceAPAC@elsevier.com

Advertising information: If you are interested in advertising or other commercial opportunities please e-mail Commercialsales@elsevier.com and your enquiry will be passed to the correct person who will respond to you within 48 hours.

USA mailing notice: *Journal of Computational Physics* (ISSN 0021-9991) is published semimonthly but monthly in January by Elsevier Inc. (360 Park Avenue South, New York, NY 10010-1710, USA). Periodical postage paid at Rahway NJ and additional mailing offices.

USA POSTMASTER: Send change of address to *Journal of Computational Physics*, Elsevier Customer Service Department, 3251 Riverport Lane, Maryland Heights, MO 63043, USA.

AIRFREIGHT AND MAILING in USA by Mercury International Limited, 365 Blair Road, Avenel, NJ 07001.

Language services: Authors who require information about language editing and copyediting services pre- and post-submission please visit <http://www.elsevier.com/locate/languagepolishing> or contact authorsupport@elsevier.com for more information. Please note Elsevier neither endorses nor takes responsibility for any products, goods or services offered by outside vendors through our services or in any advertising. For more information please refer to our Terms & Conditions <http://www.elsevier.com/termsandconditions>

Upon acceptance of an article. Authors will be asked to transfer copyright (for more information on copyright see www.elsevier.com/permissions). This transfer will ensure the widest possible dissemination of information. A letter will be sent to the corresponding Author confirming receipt of the manuscript. A form facilitating transfer of copyright will be provided.

© The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper)