

JOURNAL OF COMPUTATIONAL PHYSICS

Editor

Gretar Tryggvason

Worcester Polytechnic Institute, Worcester, Massachusetts

Associate Editors

| | | | |
|--|--|---|--|
| Rémi Abgrall <i>Université Bordeaux I Talence, France</i> | George Karniadakis <i>Brown University Providence Rhode Island</i> | Stanley J. Osher <i>University of California Los Angeles, California</i> | Huazhong Tang <i>Peking University Peking, P.R. China</i> |
| Nikolaus A. Adams <i>Lehrstuhl für Aerodynamik Technische Universität München Garching, Germany</i> | Dana A. Knoll <i>Los Alamos National Laboratory Los Alamos, New Mexico</i> | Annick Pouquet <i>National Center for Atmospheric Research Boulder, Colorado</i> | Tao Tang <i>The Hong Kong Baptist University Kowloon Tong Hong Kong</i> |
| Alvin Bayliss <i>Northwestern University Evanston, Illinois</i> | Barry Koren <i>Centre for Mathematics and Computer Science Amsterdam, The Netherlands</i> | Jianxian Qiu <i>Nanjing University Nanjing, P.R. China</i> | Anna-Karin Tornberg <i>The Royal Swedish Academy of Sciences (KVA) Stockholm, Sweden</i> |
| John P. Boyd <i>University of Michigan Ann Arbor, Michigan</i> | Petros Koumoutsakos <i>Swiss Federal Institute of Technology Zürich, Switzerland</i> | Tamar Schlick <i>New York University New York, New York</i> | Eli Turkel <i>Tel Aviv University Tel Aviv, Israel</i> |
| Shiyi Chen <i>The Johns Hopkins University Baltimore, Maryland</i> | William R. Martin <i>University of Michigan Ann Arbor, Michigan</i> | John Shadid <i>Sandia National Laboratories Albuquerque, USA</i> | Evgenii V. Vorozhtsov <i>Institute of Theoretical and Applied Mechanics Novosibirsk, Russia</i> |
| Haecheon Choi <i>Seoul National University Seoul, S. Korea</i> | Rajat Mittal <i>Department of Mechanical and Aerospace Engineering The George Washington University Washington DC</i> | Piotr K. Smolarkiewicz <i>National Center for Atmospheric Research Boulder, Colorado</i> | Feng Xiao <i>Institute of Mechanics, Chinese Academy of Sciences Beijing, China</i> |
| Pierre Degond <i>Université Paul Sabatier (Toulouse) Toulouse, France</i> | Parviz Moin <i>Stanford University Stanford, California</i> | John Strain <i>University of California Berkeley, California</i> | Stéphane Zaleski <i>Université Pierre et Marie Curie Paris, France</i> |

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: Advertising orders and enquiries can be sent to: Janine Castle, Elsevier Ltd., The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK; phone: (+44) 1865 843 844; fax: (+44) 1865 853 973; e-mail: j.castle@elsevier.com. Customers in the USA and Canada can also contact: Mr Tino DeCarlo, Advertising Department, Elsevier Inc., 360 Park Avenue South, New York, NY 10010-1710, USA; phone: (+1) (212) 633 3815; fax: (+1) (212) 633 3820; e-mail: t.decarlo@elsevier.com

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)