

VOLUME 70 NUMBER 236

OCTOBER 2001

# MATHEMATICS OF COMPUTATION

A M E R I C A N M A T H E M A T I C A L S O C I E T Y

**EDITED BY**

Randolph E. Bank  
David W. Boyd  
Susanne C. Brenner  
Richard P. Brent  
Joe P. Buhler  
Carsten Carstensen  
Arjeh M. Cohen  
Ronald F. A. Cools  
Howard Elman  
Richard S. Falk  
Andrew J. Granville  
Daniel W. Lozier  
Zhi-Quan Luo  
Roswitha März  
Harald Niederreiter  
Ricardo Horacio Nochetto  
Stanley Osher  
Haesun Park  
Joseph E. Pasciak  
Lothar Reichel  
René Schoof  
Chi-Wang Shu  
Frank Stenger  
Denis Talay  
Nico M. Temme  
Lars B. Wahlbin, *Managing Editor*  
Joseph D. Ward  
Hugh C. Williams  
Jinchao Xu

PROVIDENCE, RHODE ISLAND USA

ISSN 0025-5718

*Available electronically at*  
[www.ams.org/mcom/](http://www.ams.org/mcom/)

## Mathematics of Computation

This journal publishes research articles in computational mathematics. Areas covered include numerical analysis, with emphasis on the mathematical analysis and development of methods, computational number theory and algebra, and related fields. Table errata and reviews of books in areas related to computational mathematics are also included.

**Submission information.** See **Information for Authors** at the end of this issue.

**Publisher Item Identifier.** The Publisher Item Identifier (PII) appears at the top of the first page of each article published in this journal. This alphanumeric string of characters uniquely identifies each article and can be used for future cataloging, searching, and electronic retrieval.

**Postings to the AMS website.** Articles are posted to the AMS website individually after proof is returned from authors and before appearing in an issue.

**Subscription information.** *Mathematics of Computation* is published quarterly. Beginning in January 1996 *Mathematics of Computation* is accessible from [www.ams.org/publications/](http://www.ams.org/publications/). Subscription prices for Volume 70 (2001) are as follows: for paper delivery, \$366 list, \$293 institutional member, \$329 corporate member, \$238 member of CBMS organizations; \$220 individual member; for electronic delivery, \$329 list, \$263 institutional member, \$296 corporate member, \$214 member of CBMS organizations, \$197 individual member. Upon request, subscribers to paper delivery of this journal are also entitled to receive electronic delivery. If ordering the paper version, add \$12 for surface delivery outside the United States and India; \$18 to India. Expedited delivery to destinations in North America is \$17; elsewhere \$56.

**Back number information.** For back issues see the *AMS Catalog of Publications*.

Subscriptions and orders should be addressed to the American Mathematical Society, P.O. Box 845904, Boston, MA 02284-5904. *All orders must be accompanied by payment.* Other correspondence should be addressed to P.O. Box 6248, Providence, RI 02940-6248.

**Copying and reprinting.** Material in this journal may be reproduced by any means for educational and scientific purposes without fee or permission with the exception of reproduction by services that collect fees for delivery of documents and provided that the customary acknowledgment of the source is given. This consent does not extend to other kinds of copying for general distribution, for advertising or promotional purposes, or for resale. Requests for permission for commercial use of material should be addressed to the Assistant to the Publisher, American Mathematical Society, P.O. Box 6248, Providence, RI 02940-6248. Requests can also be made by e-mail to [reprint-permission@ams.org](mailto:reprint-permission@ams.org).

Excluded from these provisions is material in articles for which the author holds copyright. In such cases, requests for permission to use or reprint should be addressed directly to the author(s). (Copyright ownership is indicated in the notice in the lower right-hand corner of the first page of each article.)

---

*Mathematics of Computation* is published quarterly by the American Mathematical Society at 201 Charles Street, Providence, RI 02904-2294. Periodicals postage is paid at Providence, Rhode Island. Postmaster: Send address changes to *Mathematics of Computation*, American Mathematical Society, P. O. Box 6248, Providence, RI 02940-6248.

© 2001 by the American Mathematical Society. All rights reserved.

This journal is indexed in *Mathematical Reviews*, *Zentralblatt MATH*, *Science Citation Index*<sup>®</sup>, *Science Citation Index*<sup>TM</sup>-*Expanded*, *ISI Alerting Services*<sup>SM</sup>, *CompuMath Citation Index*<sup>®</sup>, and *Current Contents*<sup>®</sup>/*Physical, Chemical & Earth Sciences*.

⊗ The paper used in this book is acid-free and falls within the guidelines established to ensure permanence and durability.