

AUTHOR INDEX TO VOLUME 68

- Acciaro, Vincenzo and Klüners, Jürgen. *Computing automorphisms of abelian number fields*, 1179
- Akiyama, Shigeki and Tanigawa, Yoshio. *Calculation of values of L-functions associated to elliptic curves*, 1201
- Alonso, Ana and Valli, Alberto. *An optimal domain decomposition preconditioner for low-frequency time-harmonic Maxwell equations*, 607
- Anderssen, Robert S. and Hegland, Markus. *For numerical differentiation, dimensionality can be a blessing!*, 1121
- Arno, Steve. *See* Ferguson, Helaman R. P.
- Bailey, David H. *See* Ferguson, Helaman R. P.
- Baltensperger, Richard; Berrut, Jean-Paul; and Noël, Benjamin. *Exponential convergence of a linear rational interpolant between transformed Chebyshev points*, 1109
- Barrett, John W. and Blowey, James F. *Finite element approximation of the Cahn-Hilliard equation with concentration dependent mobility*, 487
- Ben Belgacem, F. and Bernardi, C. *Spectral element discretization of the Maxwell equations*, 1497
- Bendali, A. and Guillaume, Ph. *Non-reflecting boundary conditions for waveguides*, 123
- Benito, Manuel and Varona, Juan L. *Advances in aliquot sequences*, 389
- Bernardi, C. *See* Ben Belgacem, F.
- Berrut, Jean-Paul. *See* Baltensperger, Richard
- Bertault, F.; Ramaré, O.; and Zimmermann, P. *On sums of seven cubes*, 1303
- Bischof, Christian. *See* Eberhard, Peter
- Blatov, I. A. and Strygin, V. V. *On best possible order of convergence estimates in the collocation method and Galerkin's method for singularly perturbed boundary value problems for systems of first-order ordinary differential equations*, 683
- Blowey, James F. *See* Barrett, John W.
- Böhmer, Klaus; Govaerts, Willy; and Janovský, Vladimír. *Numerical detection of symmetry breaking bifurcation points with nonlinear degeneracies*, 1097
- Boumenir, Amin. *Eigenvalues of periodic Sturm-Liouville problems by the Shannon-Whittaker sampling theorem*, 1057
- Brenner, Susanne C. *Convergence of nonconforming multigrid methods without full elliptic regularity*, 25
- Brenner, Susanne C. *Multigrid methods for the computation of singular solutions and stress intensity factors I: Corner singularities*, 559
- Brent, Richard P. *Factorization of the tenth Fermat number*, 429
- Browkin, Jerzy and Gangl, Herbert. *Tame and wild kernels of quadratic imaginary number fields*, 291
- Brunner, Hermann; Pedas, Arvet; and Vainikko, Gennadi. *The piecewise polynomial collocation method for nonlinear weakly singular Volterra equations*, 1079
- Buchmann, Johannes and Eisenbrand, Friedrich. *On factor refinement in number fields*, 345
- Cafisch, Russel E.; Hou, Thomas Y.; and Lowengrub, John. *Almost optimal convergence of the point vortex method for vortex sheets using numerical filtering*, 1465
- Cai, Zhiqiang. *See* Hou, Thomas Y.
- Callahan, Patrick J.; Hildebrand, Martin V.; and Weeks, Jeffrey R. *A census of cusped hyperbolic 3-manifolds*, 321
- Chalabi, A. *Convergence of relaxation schemes for hyperbolic conservation laws with stiff source terms*, 955
- Chen, Zhongying; Micchelli, Charles A.; and Xu, Yuesheng. *A construction of interpolating wavelets on invariant sets*, 1569
- Chou, So-Hsiang and Vassilevski, Panayot S. *A general mixed covolume framework for constructing conservative schemes for elliptic problems*, 991
- Cochrane, Todd and Dressler, Robert E. *Gaps between integers with the same prime factors*, 395
- Cohen, H.; Diaz y Diaz, F.; and Olivier, M. *Tables of octic fields with a quartic subfield*, 1701
- Copetti, M. I. M. *Finite element approximation to a contact problem in linear thermoelasticity*, 1013
- Coulibaly, Ibrahim and Lécot, Christian. *A quasi-randomized Runge-Kutta method*, 651
- Cremona, J. E. and Serf, P. *Computing the rank of elliptic curves over real quadratic number fields of class number 1*, 1187

AUTHOR INDEX TO VOLUME 68

- Cvijović, Djurdje and Klinowski, Jacek. *Values of the Legendre chi and Hurwitz zeta functions at rational arguments*, 1623
- Dahmen, Wolfgang and Schneider, Reinhold. *Composite wavelet bases for operator equations*, 1533
- Destuynder, Philippe and Métivet, Brigitte. *Explicit error bounds in a conforming finite element method*, 1379
- Díaz y Díaz, F. *See Cohen, H.*
- Dolzmann, Georg. *Optimal convergence for the finite element method in Campanato spaces*, 1397
- Dressler, Robert E. *See Cochran, Todd*
- Dubner, Harvey and Keller, Wilfrid. *New Fibonacci and Lucas primes*, 417
- Durán, Ricardo G. *Error estimates for 3-d narrow finite elements*, 187
- Durán, R. G.; Hervella-Nieto, L.; Liberman, E.; Rodríguez, R.; and Solomin, J. *Approximation of the vibration modes of a plate by Reissner-Mindlin equations*, 1447
- Dusart, Pierre. *The k^{th} prime is greater than $k(\ln k + \ln \ln k - 1)$ for $k \geq 2$* , 411
- Dziuk, Gerhard and Hutchinson, John E. *The discrete Plateau Problem: Algorithm and numerics*, 1
- Dziuk, Gerhard and Hutchinson, John E. *The discrete Plateau Problem: Convergence results*, 519
- Eberhard, Peter and Bischof, Christian. *Automatic differentiation of numerical integration algorithms*, 717
- Eisenbrand, Friedrich. *See Buchmann, Johannes*
- Ezzirani, Abdelkrim and Guessab, Allal. *A fast algorithm for Gaussian type quadrature formulae with mixed boundary conditions and some lumped mass spectral approximations*, 217
- Feisel, Sandra; von zur Gathen, Joachim; and Shokrollahi, M. Amin. *Normal bases via general Gauss periods*, 271
- Feng, Xiaobing. *Absorbing boundary conditions for electromagnetic wave propagation*, 145
- Ferguson, Helaman R. P.; Bailey, David H.; and Arno, Steve. *Analysis of PSLQ, an integer relation finding algorithm*, 351
- Forbes, Tony. *Prime clusters and Cunningham chains*, 1739
- Gangl, Herbert. *See Browkin, Jerzy*
- García-Archilla, Bosco; Novo, Julia; and Titi, Edriss S. *An approximate inertial manifolds approach to postprocessing the Galerkin method for the Navier-Stokes equations*, 893
- von zur Gathen, Joachim. *See Feisel, Sandra*
- Gekeler, Ernst-Ulrich; Leitl, Rita; and Wack, Bodo. *Zeta functions of a class of elliptic curves over a rational function field of characteristic two*, 823
- González, C. and Palencia, C. *Stability of Runge-Kutta methods for abstract time-dependent parabolic problems: The Hölder case*, 73
- Govaerts, Willy. *See Böhmer, Klaus*
- Gröchenig, Karlheinz. *Irregular sampling, Toeplitz matrices, and the approximation of entire functions of exponential type*, 749
- Guessab, Allal. *See Ezzirani, Abdelkrim*
- Guillaume, Ph. *See Bendali, A.*
- Guo Ben-yu. *Error estimation of Hermite spectral method for nonlinear partial differential equations*, 1067
- Guo, Chun-Hua and Lancaster, Peter. *Iterative solution of two matrix equations*, 1589
- Hajdu, L. and Pintér, Á. *Square product of three integers in short intervals*, 1299
- Hashimoto, Ki-ichiro and Tsunogai, Hiroshi. *On the Sato-Tate conjecture for QM-curves of genus two*, 1649
- Hegland, Markus. *See Anderssen, Robert S.*
- Hervella-Nieto, L. *See Durán, R. G.*
- Hickernell, Fred J. and Hong, Hee Sun. *The asymptotic efficiency of randomized nets for quadrature*, 767
- Hildebrand, Martin V. *See Callahan, Patrick J.*
- Hiptmair, R. *Canonical construction of finite elements*, 1325
- Hong, Hee Sun. *See Hickernell, Fred J.*
- Hoppe, Ronald H. W. *See Wohlmuth, Barbara I.*

AUTHOR INDEX TO VOLUME 68

- Horng, Gwoboa and Huang, Ming-Deh. *Solving polynomials by radicals with roots of unity in minimum depth*, 881
- Hou, Thomas Y.; Wu, Xiao-Hui; and Cai, Zhiqiang. *Convergence of a multiscale finite element method for elliptic problems with rapidly oscillating coefficients*, 913
- Hou, Thomas Y. *See* Caflisch, Russel E.
- Huang, Ming-Deh. *See* Horng, Gwoboa
- Hutchinson, John E. *See* Dziuk, Gerhard
- Iannucci, Douglas E. *The second largest prime divisor of an odd perfect number exceeds ten thousand*, 1749
- Indlekofer, Karl-Heinz and Jármai, Antal. *Largest known twin primes and Sophie Germain primes*, 1317
- Jacobson, Michael J., Jr. *Applying sieving to the computation of quadratic class groups*, 859
- Janovský, Vladimír. *See* Böhmer, Klaus
- Jármai, Antal. *See* Indlekofer, Karl-Heinz
- Jetter, Kurt; Stöckler, Joachim; and Ward, Joseph D. *Error estimates for scattered data interpolation on spheres*, 733
- Keller, Wilfrid. *See* Dubner, Harvey
- Khajah, H. G. *Tau method approximation of a generalized Epstein-Hubbell elliptic-type integral*, 1615
- Kida, Masanari. *Reduction of elliptic curves over certain real quadratic number fields*, 1679
- Klinowski, Jacek. *See* Cvijović, Djurdje
- Kliners, Jürgen. *See* Acciari, Vincenzo
- Koyama, Kenji. *See* Sekigawa, Hiroshi
- L'Ecuyer, Pierre. *Tables of linear congruential generators of different sizes and good lattice structure*, 249
- L'Ecuyer, Pierre. *Tables of maximally equidistributed combined LFSR generators*, 261
- Lancaster, Peter. *See* Guo, Chun-Hua
- Larsson, Stig and Sanz-Serna, J.-M. *A shadowing result with applications to finite element approximation of reaction-diffusion equations*, 55
- LeFloch, Philippe G. and Liu, Jian-Guo. *Generalized monotone schemes, discrete paths of extrema, and discrete entropy conditions*, 1025
- Le Roux, Marie-Noelle and Mainge, Paul-Emile. *Numerical solution of a fast diffusion equation*, 461
- Le Tallec, P. and Tidriri, M. D. *Convergence analysis of domain decomposition algorithms with full overlapping for the advection-diffusion problems*, 585
- Lécot, Christian. *See* Coulibaly, Ibrahim
- Leemans, Dimitri. *An atlas of regular thin geometries for small groups*, 1631
- Lefton, Lew. *See* Wei, Dongming
- Leitl, Rita. *See* Gekeler, Ernst-Ulrich
- Li, Ruixia. *On the coupling of BEM and FEM for exterior problems for the Helmholtz equation*, 945
- Liberman, E. *See* Durán, R. G.
- Liu, Jian-Guo. *See* LeFloch, Philippe G.
- Lowengrub, John. *See* Caflisch, Russel E.
- Mainge, Paul-Emile. *See* Le Roux, Marie-Noelle
- McKee, James. *Speeding Fermat's factoring method*, 1729
- Métivier, Brigitte. *See* Destuynder, Philippe
- Micchelli, Charles A. *See* Chen, Zhongying
- Morini, Benedetta. *Convergence behaviour of inexact Newton methods*, 1605
- Müller, Volker; Stein, Andreas; and Thiel, Christoph. *Computing discrete logarithms in real quadratic congruence function fields of large genus*, 807
- Nicely, Thomas R. *New maximal prime gaps and first occurrences*, 1311
- Noël, Benjamin. *See* Baltensperger, Richard
- Novo, Julia. *See* García-Archilla, Bosco
- Oliveira e Silva, Tomás. *Maximum excursion and stopping time record-holders for the $3x + 1$ problem: Computational results*, 371
- Olivier, M. *See* Cohen, H.

AUTHOR INDEX TO VOLUME 68

- Oswald, Peter. *On the robustness of the BPX-preconditioner with respect to jumps in the coefficients*, 633
- Palencia, C. *See* González, C.
- Paulus, Sachar and Rück, Hans-Georg. *Real and imaginary quadratic representations of hyperelliptic function fields*, 1233
- Pedas, Arvet. *See* Brunner, Hermann
- Pinner, Christopher. *Double roots of $[-1, 1]$ power series and related matters*, 1149
- Pintér, Á. *See* Hajdu, L.
- Ramaré, O. *See* Bertault, F.
- Rodríguez, R. *See* Durán, R.G.
- Roelse, Peter. *Factoring high-degree polynomials over \mathbf{F}_2 with Niederreiter's algorithm on the IBM SP2*, 869
- Rück, Hans-Georg. *On the discrete logarithm in the divisor class group of curves*, 805
- Rück, Hans-Georg. *See* Paulus, Sachar
- Sanz-Serna, J.-M. *See* Larsson, Stig
- Schaback, R. *Improved error bounds for scattered data interpolation by radial basis functions*, 201
- Schneider, Reinhold. *See* Dahmen, Wolfgang
- Schwab, C. and Wendland, W. L. *On the extraction technique in boundary integral equations*, 91
- Seiler, Werner M. *Numerical integration of constrained Hamiltonian systems using Dirac brackets*, 661
- Sekigawa, Hiroshi and Koyama, Kenji. *Nonexistence conditions of a solution for the congruence $x_1^k + \cdots + x_s^k \equiv N \pmod{p^n}$* , 1283
- Selmane, Schehrazad. *Non-primitive number fields of degree eight and of signature (2, 3), (4, 2) and (6, 1) with small discriminant*, 333
- Serf, P. *See* Cremona, J. E.
- Serra, Stefano. *Superlinear PCG methods for symmetric Toeplitz systems*, 793
- Shanks, Daniel C.; Sime, Patrick J.; and Washington, Lawrence C. *Zeros of 2-adic L-functions and congruences for class numbers and fundamental units*, 1243
- Shokrollahi, M. A. *Relative class number of imaginary Abelian fields of prime conductor below 10000*, 1717
- Shokrollahi, M. Amin. *See* Feisel, Sandra
- Silverman, Joseph H. *Computing rational points on rank 1 elliptic curves via L-series and canonical heights*, 835
- Sime, Patrick J. *See* Shanks, Daniel C.
- Smart, N. P. *Determining the small solutions to S-unit equations*, 1687
- Solomin, J. *See* Durán, R. G.
- Stein, Andreas. *See* Müller, Volker
- Stöckler, Joachim. *See* Jetter, Kurt
- Stroeker, Roelof J. and de Weger, Benjamin M. M. *Elliptic binomial diophantine equations*, 1257
- Strygin, V. V. *See* Blatov, I. A.
- Tanigawa, Yoshio. *See* Akiyama, Shigeki
- Thiel, Christoph. *See* Müller, Volker
- Tidriri, M. D. *See* Le Tallec, P.
- Titi, Edriss S. *See* García-Archilla, Bosco
- Tsunogai, Hiroshi. *See* Hashimoto, Ki-ichiro
- Vainikko, Gennadi. *See* Brunner, Hermann
- Valli, Alberto. *See* Alonso, Ana
- Varona, Juan L. *See* Benito, Manuel
- Vassilevski, Panayot S. *See* Chou, So-Hsiang
- Wack, Bodo. *See* Gekeler, Ernst-Ulrich
- Walsh, P. G. *On two classes of simultaneous Pell equations with no solutions*, 385
- van Wamelen, Paul. *Examples of genus two CM curves defined over the rationals*, 307
- van Wamelen, Paul. *Proving that a genus 2 curve has complex multiplication*, 1663
- Wang Xinghua. *Convergence of Newton's method and inverse function theorem in Banach space*, 169
- Ward, Joseph D. *See* Jetter, Kurt

INDEX TO VOLUME 68 (1999)

- Washington, Lawrence C. *See* Shanks, Daniel C.
Weeks, Jeffrey R. *See* Callahan, Patrick J.
de Weger, Benjamin M. M. *See* Stroeker, Roelof J.
Wei, Dongming and Lefton, Lew. *A priori* L^p error estimates for Galerkin approximations to porous medium and fast diffusion equations, 971
Wendland, Holger. Meshless Galerkin methods using radial basis functions, 1521
Wendland, W. L. *See* Schwab, C.
Wohlmuth, Barbara I. and Hoppe, Ronald H. W. A comparison of a posteriori error estimators for mixed finite element discretizations by Raviart-Thomas elements, 1347
Wu, Xiao-Hui. *See* Hou, Thomas Y.
Xu, Jinchao and Zikatanov, Ludmil. A monotone finite element scheme for convection-diffusion equations, 1429
Xu, Yuesheng. *See* Chen, Zhongying
Yang Hongtao. On the convergence of boundary element methods for initial-Neumann problems for the heat equation, 547
Zikatanov, Ludmil. *See* Xu, Jinchao
Zimmermann, P. *See* Bertault, F.
Ziv, Abraham. Sharp ULP rounding error bound for the hypotenuse function, 1143
Živković, Miodrag. The number of primes $\sum_{i=1}^n (-1)^{n-i} i!$ is finite, 403

INDEX OF REVIEWS BY AUTHOR OF WORK REVIEWED

<i>Author</i>	<i>Review Number</i>	<i>Classification</i>	<i>Page</i>
BAU, DAVID, III	1	See TREFETHEN, LLOYD N.	453
CANAS, JOSE	4	See PARIS, FREDERICO	457
GAUTSCHI, WALTER	5	65-01	887
DE GOEDE, E. D.	3	65M06, 65M12, 65M20	456
GREENBAUM, ANNE	7	65-02, 65F10	890
ISERLES, ARIEH	2	65-01, 65Lxx, 65Mxx	454
PARIS, FREDERICO & CANAS, JOSE	4	65-00, 65-01	457
STEWART, G. W.	6	65-01	887
TREFETHEN, LLOYD N. & BAU, DAVID, III	1	65-01, 65Fxx	453

INDEX OF REVIEWS BY SUBJECT OF WORK REVIEWED

<i>Author</i>	<i>Review Number</i>	<i>Title</i>	<i>Page</i>
65-XX Numerical analysis			
65-00 General reference works (handbooks, dictionaries, bibliographies, etc.)			
PARIS, FREDERICO & CANAS, JOSE	4	Boundary element method, fundamentals and applications	457
65-01 Instructional exposition (textbooks, tutorial papers, etc.)			
GAUTSCHI, WALTER	5	Numerical analysis, an introduction	887
ISERLES, ARIEH	2	A first course in the numerical analysis of differential equations	454
PARIS, FREDERICO & CANAS, JOSE	4	Boundary element method, fundamentals and applications	457
STEWART, G. W.	6	Afternotes goes to graduate school, lectures in advanced numerical analysis	887
TREFETHEN, LLOYD N. & BAU, DAVID, III	1	Numerical linear algebra	453
65-02 Research exposition (monographs, survey articles)			
GREENBAUM, ANNE	7	Iterative methods for solving linear sys- tems	890
65Fxx Numerical linear algebra			
TREFETHEN, LLOYD N. & BAU, DAVID, III	1	Numerical linear algebra	453
65F10 Iterative methods for linear systems			
GREENBAUM, ANNE	7	Iterative methods for solving linear sys- tems	890
65Lxx Ordinary differential equations			
ISERLES, ARIEH	2	A first course in the numerical analysis of differential equations	454

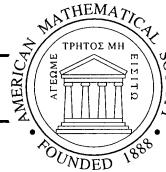
INDEX OF REVIEWS BY SUBJECT OF WORK REVIEWED

65Mxx <i>Partial differential equations, initial value and time-dependent initial-boundary value problems</i>			
ISERLES, ARIEH	2	A first course in the numerical analysis of differential equations	454
65M06 <i>Finite difference methods</i>			
DE GOEDE, E. D.	3	Numerical methods for the three dimensional shallow water equations on supercomputers	456
65M12 <i>Stability and convergence of numerical methods</i>			
DE GOEDE, E. D.	3	Numerical methods for the three dimensional shallow water equations on supercomputers	456
65M20 <i>Method of lines</i>			
DE GOEDE, E. D.	3	Numerical methods for the three dimensional shallow water equations on supercomputers	456

INDEX OF SUPPLEMENTS

DUBNER, HARVEY & KELLER, WILFRED	New Fibonacci and Lucas primes	S1
KELLER, WILFRED	See DUBNER, HARVEY	S1

VOLUME 68



1999

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

David W. Boyd
James H. Bramble
Susanne C. Brenner
Richard P. Brent
Joe P. Buhler
Carsten Carstensen
Arjeh M. Cohen
Howard Elman
Richard S. Falk
Andrew J. Granville
Daniel W. Lozier
James N. Lyness
Roswitha M  rz
Harald Niederreiter
Ricardo Horacio Nochetto
Stanley Osher
Haesun Park
Joseph E. Pasciak
Lothar Reichel
Ren   Schoof
Chi-Wang Shu
Frank Stenger
Nico M. Temme
Vidar Thom  e
Lars B. Wahlbin, *Managing Editor*
Joseph D. Ward
Hugh C. Williams
Stephen J. Wright

PROVIDENCE, RHODE ISLAND USA

ISSN 0025-5718

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 e-MATH. Articles are posted individually to e-MATH before appearing in an issue.

Subscription information. *Mathematics of Computation* is published quarterly. Beginning in January 1996 *Mathematics of Computation* is accessible from e-MATH via the World Wide Web at the URL <http://www.ams.org/publications/>. Subscription prices for Volume 68 (1999) are as follows: for paper delivery, \$332 list, \$266 institutional member, \$299 corporate member, \$216 member of CBMS organizations; \$199 individual member; for electronic delivery, \$299 list, \$239 institutional member, \$269 corporate member, \$194 member of CBMS organizations, \$179 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 5904, Boston, MA 02206-5904. *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.

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 02904-2213. 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.

© 1999 by the American Mathematical Society. All rights reserved.

This journal is indexed in *Science Citation Index®*, *SciSearch®*, *Research Alert®*, *CompuMath Citation Index®*, and *Current Contents®/Physical, Chemical & Earth Sciences*.

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

MATHEMATICS OF COMPUTATION

CONTENTS

Vol. 68, No. 225

January 1999

Gerhard Dziuk and John E. Hutchinson, The discrete Plateau Problem: Algorithm and numerics	1
Susanne C. Brenner, Convergence of nonconforming multigrid methods without full elliptic regularity	25
Stig Larsson and J.-M. Sanz-Serna, A shadowing result with applications to finite element approximation of reaction-diffusion equations	55
C. González and C. Palencia, Stability of Runge-Kutta methods for abstract time-dependent parabolic problems: The Hölder case	73
C. Schwab and W. L. Wendland, On the extraction technique in boundary integral equations	91
A. Bendali and Ph. Guillaume, Non-reflecting boundary conditions for waveguides	123
Xiaobing Feng, Absorbing boundary conditions for electromagnetic wave propagation	145
Wang Xinghua, Convergence of Newton's method and inverse function theorem in Banach space	169
Ricardo G. Durán, Error estimates for 3-d narrow finite elements	187
R. Schaback, Improved error bounds for scattered data interpolation by radial basis functions	201
Abdelkrim Ezzirani and Allal Guessab, A fast algorithm for Gaussian type quadrature formulae with mixed boundary conditions and some lumped mass spectral approximations	217
Pierre L'Ecuyer, Tables of linear congruential generators of different sizes and good lattice structure	249
Pierre L'Ecuyer, Tables of maximally equidistributed combined LFSR generators	261
Sandra Feisel, Joachim von zur Gathen, and M. Amin Shokrollahi, Normal bases via general Gauss periods	271
Jerzy Browkin and Herbert Gangl, Tame and wild kernels of quadratic imaginary number fields	291
Paul van Wamelen, Examples of genus two CM curves defined over the rationals	307
Patrick J. Callahan, Martin V. Hildebrand, and Jeffrey R. Weeks, A census of cusped hyperbolic 3-manifolds	321
Schehrazad Selmane, Non-primitive number fields of degree eight and of signature (2, 3), (4, 2) and (6, 1) with small discriminant	333
Johannes Buchmann and Friedrich Eisenbrand, On factor refinement in number fields	345
Helaman R. P. Ferguson, David H. Bailey, and Steve Arno, Analysis of PSLQ, an integer relation finding algorithm	351
Tomás Oliveira e Silva, Maximum excursion and stopping time record- holders for the $3x + 1$ problem: Computational results	371
P. G. Walsh, On two classes of simultaneous Pell equations with no solutions	385

Manuel Benito and Juan L. Varona , Advances in aliquot sequences ...	389
Todd Cochrane and Robert E. Dressler , Gaps between integers with the same prime factors	395
Miodrag Živković , The number of primes $\sum_{i=1}^n (-1)^{n-i} i!$ is finite	403
Pierre Dusart , The k^{th} prime is greater than $k(\ln k + \ln \ln k - 1)$ for $k \geq 2$	411
Harvey Dubner and Wilfrid Keller , New Fibonacci and Lucas primes	417
Richard P. Brent , Factorization of the tenth Fermat number	429
Reviews and Descriptions of Tables and Books	453
Lloyd N. Trefethen and David Bau, III 1, Arieh Iserles 2, E. D. de Goede 3, Frederico Paris and Jose Canas 4	
Supplement to “New Fibonacci and Lucas primes” by Harvey Dubner and Wilfred Keller	S1
Microfiche Supplement	
Patrick J. Callahan, Martin V. Hildebrand, and Jeffery R. Weeks, A census of cusped hyperbolic 3-manifolds	

Vol. 68, No. 226

April 1999

Marie-Noelle Le Roux and Paul-Emile Mainge , Numerical solution of a fast diffusion equation	461
John W. Barrett and James F. Blowey , Finite element approximation of the Cahn-Hilliard equation with concentration dependent mobility	487
Gerhard Dziuk and John E. Hutchinson , The discrete plateau problem: Convergence results	519
Yang Hongtao , On the convergence of boundary element methods for initial-Neumann problems for the heat equation	547
Susanne C. Brenner , Multigrid methods for the computation of singular solutions and stress intensity factors I: Corner singularities	559
P. Le Tallec and M. D. Tidriri , Convergence analysis of domain decomposition algorithms with full overlapping for the advection-diffusion problems	585
Ana Alonso and Alberto Valli , An optimal domain decomposition preconditioner for low-frequency time-harmonic Maxwell equations	607
Peter Oswald , On the robustness of the BPX-preconditioner with respect to jumps in the coefficients	633
Ibrahim Coulibaly and Christian Lécot , A quasi-randomized Runge-Kutta method	651
Werner M. Seiler , Numerical integration of constrained Hamiltonian systems using Dirac brackets	661
I. A. Blatov and V. V. Strygin , On best possible order of convergence estimates in the collocation method and Galerkin's method for singularly perturbed boundary value problems for systems of first-order ordinary differential equations	683

Peter Eberhard and Christian Bischof, Automatic differentiation of numerical integration algorithms	717
Kurt Jetter, Joachim Stöckler, and Joseph D. Ward, Error estimates for scattered data interpolation on spheres	733
Karlheinz Gröchenig, Irregular sampling, Toeplitz matrices, and the approximation of entire functions of exponential type	749
Fred J. Hickernell and Hee Sun Hong, The asymptotic efficiency of randomized nets for quadrature	767
Stefano Serra, Superlinear PCG methods for symmetric Toeplitz systems	793
Hans-Georg Rück, On the discrete logarithm in the divisor class group of curves	805
Volker Müller, Andreas Stein, and Christoph Thiel, Computing discrete logarithms in real quadratic congruence function fields of large genus	807
Ernst-Ulrich Gekeler, Rita Leitl, and Bodo Wack, Zeta functions of a class of elliptic curves over a rational function field of characteristic two	823
Joseph H. Silverman, Computing rational points on rank 1 elliptic curves via L -series and canonical heights	835
Michael J. Jacobson, Jr. Applying sieving to the computation of quadratic class groups	859
Peter Roelse, Factoring high-degree polynomials over \mathbf{F}_2 with Niederreiter's algorithm on the IBM SP2	869
Gwoboa Horng and Ming-Deh Huang, Solving polynomials by radicals with roots of unity in minimum depth	881
Reviews and Descriptions of Tables and Books	887
Walter Gautschi 5, G. W. Stewart 6, Anne Greenbaum 7	

Vol. 68, No. 227

July 1999

Bosco García-Archilla, Julia Novo, and Edriss S. Titi, An approximate inertial manifolds approach to postprocessing the Galerkin method for the Navier-Stokes equations	893
Thomas Y. Hou, Xiao-Hui Wu, and Zhiqiang Cai, Convergence of a multiscale finite element method for elliptic problems with rapidly oscillating coefficients	913
Ruixia Li, On the coupling of BEM and FEM for exterior problems for the Helmholtz equation	945
A. Chalabi, Convergence of relaxation schemes for hyperbolic conservation laws with stiff source terms	955
Dongming Wei and Lew Lefton, A priori L^p error estimates for Galerkin approximations to porous medium and fast diffusion equations	971
So-Hsiang Chou and Panayot S. Vassilevski, A general mixed covolume framework for constructing conservative schemes for elliptic problems	991

M. I. M. Copetti , Finite element approximation to a contact problem in linear thermoelasticity	1013
Philippe G. LeFloch and Jian-Guo Liu , Generalized monotone schemes, discrete paths of extrema, and discrete entropy conditions	1025
Amin Boumenir , Eigenvalues of periodic Sturm-Liouville problems by the Shannon-Whittaker sampling theorem	1057
Guo Ben-yu , Error estimation of Hermite spectral method for nonlinear partial differential equations	1067
Hermann Brunner, Arvet Pedas, and Gennadi Vainikko , The piecewise polynomial collocation method for nonlinear weakly singular Volterra equations	1079
Klaus Böhmer, Willy Govaerts, and Vladimír Janovský , Numerical detection of symmetry breaking bifurcation points with nonlinear degeneracies	1097
Richard Baltensperger, Jean-Paul Berrut, and Benjamin Noël , Exponential convergence of a linear rational interpolant between transformed Chebyshev points	1109
Robert S. Anderssen and Markus Hegland , For numerical differentiation, dimensionality can be a blessing!	1121
Abraham Ziv , Sharp ULP rounding error bound for the hypotenuse function	1143
Christopher Pinner , Double roots of $[-1, 1]$ power series and related matters	1149
Vincenzo Acciaro and Jürgen Klüners , Computing automorphisms of abelian number fields	1179
J. E. Cremona and P. Serf , Computing the rank of elliptic curves over real quadratic number fields of class number 1	1187
Shigeki Akiyama and Yoshio Tanigawa , Calculation of values of L -functions associated to elliptic curves	1201
Sachar Paulus and Hans-Georg Rück , Real and imaginary quadratic representations of hyperelliptic function fields	1233
Daniel C. Shanks, Patrick J. Sime, and Lawrence C. Washington , Zeros of 2-adic L -functions and congruences for class numbers* and fundamental units	1243
Roelof J. Stroeker and Benjamin M. M. de Weger , Elliptic binomial diophantine equations	1257
Hiroshi Sekigawa and Kenji Koyama , Nonexistence conditions of a solution for the congruence $x_1^k + \dots + x_s^k \equiv N \pmod{p^n}$	1283
L. Hajdu and Á. Pintér , Square product of three integers in short intervals	1299
F. Bertault, O. Ramaré, and P. Zimmermann , On sums of seven cubes	1303
Thomas R. Nicely , New maximal prime gaps and first occurrences	1311
Karl-Heinz Indlekofer and Antal Járai , Largest known twin primes and Sophie Germain primes	1317

R. Hiptmair , Canonical construction of finite elements	1325
Barbara I. Wohlmuth and Ronald H. W. Hoppe , A comparison of a posteriori error estimators for mixed finite element discretizations by Raviart-Thomas elements	1347
Philippe Destuynder and Brigitte Métivet , Explicit error bounds in a conforming finite element method	1379
Georg Dolzmann , Optimal convergence for the finite element method in Campanato spaces	1397
Jinchao Xu and Ludmil Zikatanov , A monotone finite element scheme for convection-diffusion equations	1429
R. G. Durán, L. Hervella-Nieto, E. Liberman, R. Rodríguez, J. Solomin , Approximation of the vibration modes of a plate by Reissner-Mindlin equations	1447
Russel E. Caflisch, Thomas Y. Hou, and John Lowengrub , Almost optimal convergence of the point vortex method for vortex sheets using numerical filtering	1465
F. Ben Belgacem and C. Bernardi , Spectral element discretization of the Maxwell equations	1497
Holger Wendland , Meshless Galerkin methods using radial basis functions	1521
Wolfgang Dahmen and Reinhold Schneider , Composite wavelet bases for operator equations	1533
Zhongying Chen, Charles A. Micchelli, and Yuesheng Xu , A construction of interpolating wavelets on invariant sets	1569
Chun-Hua Guo and Peter Lancaster , Iterative solution of two matrix equations	1589
Benedetta Morini , Convergence behaviour of inexact Newton methods	1605
H. G. Khajah , Tau method approximation of a generalized Epstein-Hubbell elliptic-type integral	1615
Djurdje Cvijović and Jacek Klinowski , Values of the Legendre chi and Hurwitz zeta functions at rational arguments	1623
Dimitri Leemans , An atlas of regular thin geometries for small groups	1631
Ki-ichiro Hashimoto and Hiroshi Tsunogai , On the Sato-Tate conjecture for QM-curves of genus two	1649
Paul van Wamelen , Proving that a genus 2 curve has complex multiplication	1663
Masanari Kida , Reduction of elliptic curves over certain real quadratic number fields	1679
N. P. Smart , Determining the small solutions to S -unit equations	1687
H. Cohen, F. Diaz y Diaz, and M. Olivier , Tables of octic fields with a quartic subfield	1701
M. A. Shokrollahi , Relative class number of imaginary Abelian fields of prime conductor below 10000	1717

James McKee , Speeding Fermat's factoring method	1729
Tony Forbes , Prime clusters and Cunningham chains	1739
Douglas E. Iannucci , The second largest prime divisor of an odd perfect number exceeds ten thousand	1749