

Celebrating 75 Years of Mathematics of Computation

A Symposium

ICERM November 1–3, 2018

Susanne C. Brenner Math. Comp. 75

Mathematical Tables and other Aids to Computation



Mathematics of Computation is the oldest journal in the world devoted to computation. It was founded by Raymond Clare Archibald in 1943 and published by the National Research Council of the National Academy of Sciences from 1943 to 1965, originally under the title of Mathematical Tables and other Aids to Computation.



Computation

A journal devoted to advances in numerical analysis, the application of computational methods, mathematical tables, high-speed calculators and other aids to computation



Formerly: Mathematical Tables and other Aids to Computation

Published Quarterly by the National Academy of Sciences-National Research Council The title was changed to Mathematics of Computation in 1960.

A journal devoted to advances in numerical analysis, the application of computational methods, mathematical tables, high-speed calculators and other aids to computation

Mathematics of Computation

Volume 20, Number 93 January, 1966

Published by the American Mathematical Society PROVIDENCE, RHODE ISLAND The publication of Mathematics of Computation was transferred to the American Mathematical Society in 1966.

Eugene Isaacson

The origin of Mathematics of Computation and some personal recollections, A History of Scientific Computing, ed. S.G. Nash, ACM Press, Addison-Wesley, New York, 1990, 211–216.

Harry Polachek

History of the journal Mathematical Tables and other Aids to Computation, IEEE Annals of the History of Computing **17** (1995), 67–74.



Archibald



Lehmer







Polachek



Isaacson













Wahlbin

Shu

Brenner

	Editors	Pages
1943	4	132
1950	6	247
1960	10	416
1970	15	1024
1980	19	1458
1990	26	1810
2000	28	1743
2010	30	2460
2017	30	3049

443 papers from 57 countries were submitted to Math. Comp.

118 papers by authors from 35 countries were published by Math. Comp.

Editorial Board Members

US and Canada 12

Europe 14

Asia and Australia 4

6033 papers published by Mathematics of Computation are cited in MathSciNet.

- 71 are cited more than 100 times.
- 17 are cited more than 200 times.
 - 8 are cited more than 300 times.
 - 7 are cited more than 400 times.
 - 5 are cited more than 500 times.

van Haeringen, H. and Kok, L. P. (1982) Table errata: Table of integrals, series, and products by I. S. Gradshteyn and I. M. Ryzhik . **1113 citations**

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Chorin, A.J. (1968)
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Numerical solution of the Navier-Stokes equations. **726 cita-tions**

Cockburn, B. and Shu, C.-W. (1989)

TVB Runge-Kutta local projection discontinuous Galerkin finite element method for conservation laws. II. General framework. **711 citations**

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Scott, L.R. and Zhang, S. (1990)
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Finite element interpolation of nonsmooth functions satisfying boundary conditions. **689 citations**

Cockburn, B., Hou, S. and Shu, C.-W. (1990)

The Runge-Kutta local projection discontinuous Galerkin finite element method for conservation laws. IV. The multidimensional case. **502 citations**

Brandt, A. (1977)

Multi-level adaptive solutions to boundary-value problems. **471 citations**

Engquist, B. and Majda, A. (1977)

Absorbing boundary conditions for the numerical simulation of waves. **425 citations**

Gottlieb, S. and Shu, C.-W. (1998)

Total variation diminishing Runge-Kutta schemes. **353 cita-tions**

Koblitz, N. (1987) Elliptic curve cryptosystems **124 citations**

Fincke, U. and Pohst, M. (1985) Improved methods for calculating vectors of short length in a lattice, including a complexity analysis **93 citations**

Bateman, P.T. and Horn, R.A. (1962) A heuristic asymptotic formula concerning the distribution of prime numbers. **87 citations**

Frey, G. and Rück, H.-G. (1994) A remark concerning m-divisibility and the discrete logarithm in the divisor class group of curves **84 citations**

Berlekamp, E. R. (1970) Factoring polynomials over large finite fields **79 citations** Cohen, A., Dahmen, W. and DeVore, R. (2001) Adaptive wavelet methods for elliptic operator equations: Convergence rates

Zhao, H. (2005)

A fast sweeping method for Eikonal equations

Chen, Z. and Hou, T.Y. (2003)

A mixed multiscale finite element method for elliptic problems with oscillating coefficients

Chou, S.-H. and Li, Q. (2000)

Error estimates in L^2 , H^1 and L^{∞} in covolume methods for elliptic and parabolic problems: A unified approach

Stevenson, R. (2008)

The completion of locally refined simplicial partitions created by bisection

Brenner, S.C. (2004)

Korn's inequalities for piecewise H^1 vector fields

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Carstensen, C. and Bartels, S. (2002)
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Each averaging technique yields reliable a posteriori error control in FEM on unstructured grids. Part I: Low order conforming, nonconforming, and mixed FEM

Cockburn, B., Kanschat, G. and Schötzau, D. (2005)

A locally conservative LDG method for the incompressible Navier-Stokes equations

Castillo, P., Cockburn, B., Schötzau, D. and Schwab, C. (2002) Optimal a priori error estimates for the *hp*-version of the local discontinuous Galerkin method for convection-diffusion problems

Arnold, D.N., Boffi, D. and Falk, R.S. (2002)

Approximation by quadrilateral finite elements

Cockburn, B., Dong, B. and Guzmán, J. (2008)

A superconvergent LDG-hybridizable Galerkin method for second-order elliptic problems

Xu, J. and Zhou, A. (2000)

Local and parallel finite element algorithms based on two-grid discretizations

Bai, Z.-Z. (2006)

Structured preconditioners for nonsingular matrices of block two-by-two structures

Lubich, C. (2008)

On splitting methods for Schrödinger-Poisson and cubic nonlinear Schrödinger equations

Xu, J. and Zhou, A. (2001)

A two-grid discretization scheme for eigenvalue problems

Arnold, D.N., Falk, R.S. and Winther, R. (2007) Mixed finite element methods for linear elasticity with weakly imposed symmetry Xu, J. and Zhang, Z. (2004)

Analysis of recovery type a posteriori error estimators for mildly structured grids

Cockburn, B., Gopalakrishnan, J. and Sayas, F.-S. (2010) A projection-based error analysis of HDG methods

Castro, M., Gallardo, J.M. and Parés, C. (2006)

High order finite volume schemes based on reconstruction of states for solving hyperbolic systems with nonconservative products. Applications to shallow-water systems

Morin, P., Nochetto, R.H. and Siebert, K.G. (2003)

Local problems on stars: A posteriori error estimators, convergence, and performance

Crandall, M.G. and Lions, P.-L. (1984)

Two approximations of solutions of Hamilton–Jacobi equations

Tao, T. (2014)

Every odd number greater than 1 is the sum of at most five primes

Bourgain, J., Konyagin, S.V. and Shparlinski, I. (2015)

Character sums and deterministic polynomial root finding in finite fields

Lui, L.M., Gu, X. and Yau, S.-T. (2015)

Convergence of an iterative algorithm for Teichmüller maps via harmonic energy minimizers

Proceedings of Symposia in APPLIED MATHEMATICS

Volume 48

Mathematics of Computation 1943–1993: A Half-Century of Computational Mathematics

Mathematics of Computation 50th Anniversary Symposium August 9–13, 1993 Vancouver, British Columbia

Walter Gautschi Editor



American Mathematical Society

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