

List of Publications

Scientific articles

1. A priori Fehlerschranken für sukzessiv abgespaltene Polynomnullstellen. ZAMP **22**, 630–634 (1971).
2. A posteriori error bounds for the zeros of a polynomial. Numer. Math. **20**, 139–148 (1972).
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6. Ein Abstiegsverfahren für nicht-diskrete Tschebyscheff-Approximationsprobleme. In: Numerische Methoden der Approximationstheorie, Band 4 (Hrsg. L. Collatz, G. Meinardus, H. Werner), 154–171. ISNM Vol. 42, Birkhäuser, Basel, 1978.
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10. Numerical experiments on solving Theodorsen's integral equation for conformal maps with the fast Fourier transform and various nonlinear iterative methods. SIAM J. Scient. Stat. Comp. **4**, 1–30 (1983).
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14. (with Lloyd N. Trefethen) The Carathéodory-Fejér method for real rational approximation. SIAM J. Numer. Anal. **20**, 420–436 (1983).
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16. (with Stephen W. Ellacott) The polynomial Carathéodory-Fejér approximation method for Jordan regions. IMA J. Numer. Anal. **3**, 207–220 (1983).
17. (with Stephen W. Ellacott) The Carathéodory-Fejér extension of a finite geometric series. IMA J. Numer. Anal. **3**, 221–227 (1983).
18. Rational Carathéodory-Fejér approximation on a disk, a circle, and an interval. J. Approx. Theory **41**, 257–278 (1984).
19. On the computation of the conjugate trigonometric rational function and on a related splitting problem. SIAM J. Numer. Anal. **20**, 1198–1205 (1983).
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21. On complex rational approximation. In: Computational Aspects of Complex Analysis (H. Werner, L. Wuytack, E. Ng, H.J. Bünger, eds.), 79–101 (Part I), 103–132 (Part II). D. Reidel Publ. Co., Dordrecht, Netherlands, 1983.
22. (with Lloyd N. Trefethen) Nonuniqueness of best rational Chebyshev approximations on the unit disk. J. Approx. Theory **39**, 275–288 (1983).
23. (with Lloyd N. Trefethen) Real vs. complex rational Chebyshev approximation on an interval. Trans. Amer. Math. Soc. **280**, 555–561 (1983).
24. (with Lloyd N. Trefethen) Real and complex Chebyshev approximation on the unit disk and interval. Bull. Amer. Math. Soc. **8**, 455–458 (1983).

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26. (with Lloyd N. Trefethen) On convergence and degeneracy in rational Padé and Chebyshev approximation. *SIAM J. Math. Anal.* **16**, 198–210 (1985).
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28. Numerical conformal mapping methods based on function conjugation. *J. Comput. Appl. Math.* **14**, 31–77 (1986).
29. Hankel norm approximation of power spectra. In: *Computational and Combinatorial Methods in Systems Theory* (C.I. Byrnes and A. Lindquist, eds.), 315–326. North-Holland/Elsevier Science Publ., Amsterdam/New York, 1986.
30. (with André Kaiser) Iterative k-step methods for computing possibly repulsive fixed points in Banach spaces. *J. Math. Anal. Appl.* **125**, 104–122 (1987).
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35. An iterative method for solving linear equations based on minimum norm Pick-Nevanlinna interpolation. In: *Approximation Theory V* (C.K. Chui, L.L. Schumaker, J.D. Ward, eds.), 371–374. Academic Press, New York, 1986.

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39. The rational interpolation problem revisited. *Rocky Mountain J. Math.* **21**, 263–280 (1991).
40. Stationary and almost stationary iterative (k, l) -step methods for linear and nonlinear systems of equations. *Numer. Math.* **56**, 179–213 (1989).
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55. (with Steven F. Ashby) A matrix analysis of conjugate gradient algorithms. In: *Advances in Numerical Methods for Large Sparse Sets of Linear Systems, Parallel Processing for Scientific Computing* (M. Natori and T. Nodera, eds.), No. 9, 32–47, Keio University, 1993.
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62. (with Marlis Hochbruck) Look-ahead Levinson- and Schur-type recurrences in the Padé table. *Electronic Trans. Numer. Anal.* **2**, 104–129 (1994).
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64. (with Klaus J. Ressel) Look-ahead procedures for Lanczos-type product methods based on three-term Lanczos recurrences. *SIAM J. Matrix Anal. Appl.* **21**, 1051–1078 (2000).
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87. Deflated and augmented Krylov subspace methods: A framework for deflated BiCG and related solvers. SIAM J. Matrix Anal. Appl. **35**, 1444–1466 (2014).
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88. Revisiting (k, ℓ) -step methods. Numerical Algorithms **69**, 455–469 (electr. 2014, paper 2015).
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Extended Abstracts

1. A completed theory of the unsymmetric Lanczos process and related algorithms. Extended abstract, Householder Symposium XI on Numerical Algebra, Tylösand, Sweden, 1990.
2. A weakly stable, generically superfast algorithm for non-Hermitian Toeplitz systems. Householder Symposium XII on Numerical Algebra, Lake Arrowhead, CA, USA, 1993.
3. (with Klaus J. Ressel) Look-ahead procedures for Lanczos-type product methods based on three-term recurrences. Extended abstract, Copper Mountain Conference on Iterative Methods, Copper Mtn., CO, USA, 1996.

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Popular science articles, historical notes, obituaries

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- (4) Henrici, Peter (1923–1987). Historisches Lexikon der Schweiz, Band 6, Verlag Schwabe, Basel, 2007.
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Lecture Notes

- (1) Lineare Algebra — Studiengang Informatik, personal web site, 2001–2007.
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- (3) (with P. Arbenz, O. Chinellato and M. Sala) Software for Numerical Linear Algebra, ETH Lecture Notes, Jul. 2006

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- (2) Developments and Trends in Iterative Methods for Large Systems of Equations — in memoriam Rüdiger Weiss (W. Schönauer and M.H. Gutknecht, eds.), Special Issue, Appl. Numer. Math. **41**, No. 1 (April 2002), 245 pages.
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