LIST OF PUBLICATIONS

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Publications in refereed journals

1. J.A.Meijerink and H.A.van der Vorst, *'An Iterative Solution Method for Linear Systems of Which the Coefficient Matrix is a Symmetric M-Matrix'*, Math.of Comp., 31(137), pp. 148-162, 1977

2. J.A.Meijerink and H.A.van der Vorst,*'Guidelines for the Usage of Incomplete Decompositions in Solving Sets of Linear Equations as They Occur in Practical Problems'*, J.of Comp.Phys.,**44**(1), pp.134-155, 1981

3. Henk A.van der Vorst,*'Iterative Solution Methods for Certain Sparse Linear Systems with a Non-symmetric Matrix Arising from PDE-Problems'*, J.of Comp.Phys.,**44**(1), pp.1-19, 1981

4. H.A.van der Vorst,*'A Generalized Lanczos Scheme'*, Math.of Comp., **39**(160), pp.559-561, 1982

5. Henk A.van der Vorst,*'A Vectorizable Variant of Some ICCG Methods'*, SIAM J. Sci. Stat. Comput.,**3**(3), pp.350-356, 1982

6. H.A.van der Vorst,*'The Performance of FORTRAN implementations for Preconditioned Conjugate Gradients on Vector Computers'*, Parallel Computing **3** (1986) 49-58

7. A.van der Sluis and H.A.van der Vorst,*'The Rate of Convergence of Conjugate Gradients'*, Num. Math., Vol **48**(5),pp.543-560, 1986

8. H.A.van der Vorst,*'An Iterative Solution Method for Solving f(A)x=b, Using CG-Information Obtained for the Symmetric Positive Definite Matrix A'*, JCAM **18** (1987) pp.249-263

9. A. van der Sluis and H.A. van der Vorst,*The Convergence Behaviour of Ritz Values in the Presence of Close Eigenvalues*, Linear Alg. and its Appl. **88/89** (1987) pp.651-694

10. H.A. van der Vorst,*Large Tridiagonal and Block Tridiagonal Linear Systems on Vector and Parallel Computers*, Parallel Computing, **5** (1987), pp.45-54

11. H.A. van der Vorst,*Analysis of a Parallel Solution Method for Tridiagonal Linear Systems*, Parallel Computing, Vol **5** (1987), pp.303-311

12. P.H.Michielse and H.A. van der Vorst, *Data Transport in Wang's partition Method*, Parallel Computing **7**, 1988, p87-95

13. H.A. van der Vorst, *Vectorization aspects of software*, Supercomputer No. **23**, p33-41, 1988

14. H.A. van der Vorst, *Parallel Solution of Discretised PDE's*, IEEE Trans. on Magnetics, Vol **24**(1), p286-290, 1988

15. H.A. van der Vorst and K.Dekker, *Conjugate gradient type methods and Preconditioning,* J. Comp. Appl. Math., Vol **24**, 1988, pp73-87

16. H.A. van der Vorst and K. Dekker, *Vectorization of Linear Recurrence Relations*, SIAM J. Sci. Stat. Comp. Vol **10** (1),p 27-35, 1989

17. H.A. van der Vorst, *ICCG and related methods for 3D problems on vectorcomputers*, Computer Physics Communications **53**, p223-235, 1989.

18. H.A. van der Vorst, *Practical aspects of parallel scientific computing*, Future Generation Computer Systems, **4**(4), p 285-291, 1989.

19. H.A.van der Vorst, *ETA-10P versus Cyber 205*, Supercomputer, **6**(1), pp17-22, 1989

20. J.Schlichting and H.A.van der Vorst, *Solving 3D Block Bidiagonal Linear Systems on Vector Computers*, Journal of Comp. and Appl. Math, Vol **27**, 1989, p 323-330

21. H.A. van der Vorst, *High performance preconditioning*, SIAM J. Sci. Stat. Comp., Vol **10**(6), 1989, p 1174-1185

22. Yunqing Huang and Henk A. van der Vorst, *Some observations on the convergence behavior of GMRES, part I*, Natur. Sci. J. Xiangtan Univ., **11**(4), pp. 103–116, 1989.

23. Henk Van der Vorst, *Experiences with parallel vector computers for sparse linear systems*, Supercomputer, Vol. **7**(3), 1990, p 28-35

24. H.A. van der Vorst and J.B.M. Melissen, *A Petrov-Galerkin type method for solving $Ax = b$, where A is a symmetric complex matrix*, IEEE Trans. on Magnetics, **26** (2), 1990, pp.706-708

25. A. van der Sluis and H.A. van der Vorst, *SIRT- and CG-Type Methods for the Iterative Solution of Sparse Linear Least-Squares Problems*, Lin. Alg and its Appl., **130**, pp.257-302 (1990)

26. H.A.van der Vorst, *Iterative Methods for the Solution of Large Systems of Equations on Supercomputers*, Advances in Water Resources, Vol. **13** (3), 1990, p137-146.

27. Yunqing Huang and Henk A. van der Vorst, *Some observations on the convergence behavior of GMRES, part II*, Natur. Sci. J. Xiangtan Univ., **12**(2), pp. 135–149, 1990.

28. C. Vuik and H. A. van der Vorst, *A comparison of some GMRES-like methods*, Lin. Alg. and its Appl., Vol **160**, pp.131-162, 1992

29. H. A. van der Vorst, *Bi-CGSTAB: A fast and smoothly converging variant of Bi-CG for the solution of nonsymmetric linear systems*, SIAM J. Sci. Stat. Comput., Vol **13**(2), pp.631-644, 1992

30. Jack J. Dongarra and Henk A. van der Vorst, *Performance of Various Computers Using Standard Sparse Linear Equations Solving Techniques*, Supercomputer, Vol **9(5)**, Sept. 1992, pp.17–29

31. J. Demmel, M. Heath and H. van der Vorst, *Parallel Numerical Linear Algebra*, Acta Numerica 1993, Cambridge University Press, Cambridge, 1993, pp.111–198

32. H. A. van der Vorst and C. Vuik, *The superlinear convergence behaviour of GMRES*, Journal of Comp. and Appl. Math., Vol **48**, 1993, pp.327-341

33. Gerard L. G. Sleijpen, H. A. van der Vorst and D. R. Fokkema, *BICGSTAB(ℓ) and other hybrid Bi-CG methods*, Numerical Algorithms, **7**, pp. 75–109, 1994

34. Lianne G. C. Crone and Henk A. van der Vorst, *Communication aspects of the Conjugate Gradient method on distributed memory machines*, Supercomputer, **58**, Vol X, number 6, pp. 4–9, 1994

35. H.A. van der Vorst and C. Vuik, *GMRESR: a family of nested GMRES methods*, J Num. Lin. Alg. with Appl., Vol 1(4), pp.369–386, 1994

36. G.L.G. Sleijpen and H.A. van der Vorst, *An overview of approaches for the stable computation of hybrid BiCG methods*, J. Applied Num. Mathematics., **19**, pp.235–254, 1995.

37. C. C. Paige, B. N. Parlett, and H. A. van der Vorst, *Approximate solutions and eigenvalue bounds from Krylov subspaces*, Num. Lin. Algebra with Appl., **2**, pp.115–134, 1995.

38. M.N. Kooper, H.A. van der Vorst, S. Poedts, and J.P. Goedbloed, *Application of the Implicitly Updated Arnoldi Method with a Complex Shift and Invert Strategy in MHD*, J. of Comp. Phys., **118**, pp.320–328, 1995.

39. G.L.G. Sleijpen and H.A. van der Vorst, *Maintaining convergence properties of BiCGstab methods in finite precision arithmetic*, Numerical Algorithms, **10**, pp.203–223, 1995.

40. Eric de Sturler and Henk A. van der Vorst, *Reducing the effect of global communication in GM-RES(m) and CG on Parallel Distributed Memory Computers*, J. Applied Num. Math., **18**, 1995, p441-459

41. Henk A. Van der Vorst, *Modern Methods for the Iterative Solution of large Systems of Linear Equations*, Nieuw Archief voor Wiskunde, Vierde Serie Deel 14, no 1, maart 1996, pp127–143.

42. H.J.J. van Dam, J.H. van Lenthe, G.L.G. Sleijpen, and H.A. van der Vorst, *An improvement of Davidson's iteration method: Applications to MRCI and MRCEPA calculations*, J. Comput. Chemistry, **17**, pp267–272, 1996.

43. G.L.G. Sleijpen and H.A. van der Vorst, *Reliable updated residuals in hybrid Bi-CG methods*, Computing, Vol 56(2), pp.141–163, 1996.

44. Gerard L.G. Sleijpen and Henk A. van der Vorst, *A Jacobi-Davidson iteration method for linear eigenvalue problems*, SIAM J. on Matrix Analysis and Appl., **17**, pp.401–425, 1996.

45. Albert Booten and Henk van der Vorst, *Cracking Large-Scale Eigenvalue Computations, Part I: Algorithms*, Computers in Physics, **10** (3), pp. 239-242, 1996

46. Albert Booten and Henk van der Vorst, *Cracking Large-Scale Eigenvalue Computations, Part II: Implementations*, Computers in Physics, **10** (4), pp. 331-334, 1996

47. D.R. Fokkema, G.L.G. Sleijpen, and H.A. van der Vorst, *Generalized Conjugate Gradient Squared*, J. Comp. and Appl. Math., **71**, pp. 125-146, 1996

48. G.L.G. Sleijpen, J.G.L. Booten, D.R. Fokkema, and H.A. van der Vorst, *Jacobi-Davidson Type Methods for Generalized Eigenproblems and Polynomial Eigenproblems*, BIT, **36**, pp.595–633, 1996.

49. Henk van der Vorst, *Subspace Iteration for Eigenproblems*, CWI Quarterly, **9** (1 & 2), pp.151-160, 1996.

50. Gerard Sleijpen, Henk van der Vorst, and Martin van Gijzen, *Quadratic eigenproblems are no problem*, SIAM News, **29**:7, 1996, pp8–9.

51. D.R. Fokkema, G.L.G. Sleijpen, and H.A. van der Vorst, *Accelerated Inexact Newton Schemes for Large Systems of Nonlinear Equations*, SIAM J. Scient. Comput., **19** (2), pp.657–674, 1998.

52. T.F. Chan, L. De Pillis and H. van der Vorst, *Transpose-free formulations of Lanczos-type methods for nonsymmetric linear systems*, Numerical Algorithms, **17**, pp.51–66, 1998.

53. Henk van der Vorst, *Modern Iteration Methods for Very Large Eigenproblems*, Bulletin of the Japan Society for Industrial and Applied Mathematics, **8** (4), December 1998. (in Japanese)

54. D.R. Fokkema, G.L.G. Sleijpen, and H.A. van der Vorst, *Jacobi-Davidson style QR and QZ algorithms for the partial reduction of matrix pencils*, SIAM J. Scient. Comput., **20**(1), pp.94–125, 1998.

55. G.L.G. Sleijpen, H.A. van der Vorst, and E. Meijerink, *Efficient expansion of subspaces in the Jacobi-Davidson method for standard and generalized eigenproblems*, ETNA, **7**, pp.75–89, 1998.

56. Mikhail A. Botchev, Gerard L.G. Sleijpen and Henk A. van der Vorst, *Stability Control for Approximate Implicit Time-stepping Schemes with Minimal Residual Iterations*, Appl. Num. Math., **31**, pp.239–254, 1999.

57. I.S. Duff and H.A. van der Vorst, 'Developments and Trends in the Parallel Solution of Linear systems', Parallel Computing, **25** (13-14), pp.1931–1970, 1999.

58. Henk van der Vorst, 'Krylov Subspace Iteration', Computers in Science & Engineering, **2** (1),January/February, pp.32–37,2000.

59. Gerard L.G. Sleijpen and Henk A. van der Vorst, *A Jacobi-Davidson iteration method for linear eigenvalue problems*, SIAM Review, **42** (2), pp. 267–293, 2000
Highlighted version in **SIGEST** of the 1996-SIMAX paper, with improvements, a Postscript, and expanded list of references

60. Y. Saad and H. van der Vorst, *Iterative Solution of Linear Systems in the 20-th Century*, J. Comp. Appl. Math., **123** (1-2), pp.1-33, 2000.

61. G. H. Golub and H. A. van der Vorst, *Eigenvalue Computation in the 20th Century*, J. Comp. Appl. Math., **123** (1-2), pp.35-65, 2000.

62. H. van der Vorst and Q. Ye, *Refined Residual Replacement Techniques for Subspace Iterative Methods for Convergence of True Residuals*, SIAM J. Scient. Comput., **22** (3), pp. 835-852, 2000.

63. Gerard L.G. Sleijpen, Henk A. van der Vorst, and Jan Modersitzki, *Differences in the effects of rounding errors in Krylov solvers for symmetric indefinite linear systems*, SIAM J. on Matrix Anal. and Appl., **22** (3), pp. 726-751, 2000.

64. W. Bomhof and H.A. van der Vorst, *A Parallel Linear Solver for Circuit Simulation Problems*, Numer. Linear Algebra Appl., **7** (7-8), pp.649–665, 2000.

65. J.L.M. van Dorsselaer, M.E. Hochstenbach, and H.A. van der Vorst, *Computing probabilistic bounds for extreme eigenvalues of symmetric matrices with the Lanczos method*, SIAM J. on Matrix Anal. and Appl., **22** (3), pp. 837-852, 2000

66. M. Magolu monga Made and H.A. van der Vorst, *Parallel incomplete factorizations with pseudo-overlapped subdomains*, Parallel Computing, **27** (8), pp. 989-1008, 2001.

67. M. Magolu monga Made and H.A. van der Vorst, *A generalized domain decomposition paradigm for parallel incomplete LU factorization preconditionings*, Future Generation Computer Systems, **17** (8), pp. 925-932, 2001.

68. M. Magolu monga Made and H.A. van der Vorst, *Spectral analysis of parallel incomplete factorizations with implicit pseudo-overlap*, Num. Lin. Alg. with Appl., **8**, pp. ??-??, 2001.

69. M.A. Botchev and H.A. van der Vorst, *A parallel nearly implicit time-stepping scheme*, J. of Computational and Applied Mathematics, **137/2**, pp. 229-243, 2001.

Papers in Proceedings; Chapters in books

1. H.A.van der Vorst,*Iterative solution of large sparse linear systems*, in: Seminaires IRIA: Analyse et Controle de Systemes, 1976, IRIA, le Chesnay, France
2. H.A.van der Vorst,*Approximate decompositions of sparse matrices*, in: Proc. of the 1977 numerical analysis and computers conference, 1977, ARO, Research Triangle Park, NC.
3. J.A.Meijerink and H.A.van der Vorst, *Incomplete Decompositions as Preconditioning for the Conjugate Gradient Algorithm*, in: I.S.Duff ed., *Conjugate Gradient Methods and Similar Techniques*, Harwell Report, 1979
4. H.A.van der Vorst,*A Preconditioned Tchebycheff Iterative Solution Method for Certain Large Sparse Linear Systems with a Non-Symmetric Matrix*, in: J.Hinze ed., Numerical Integration of Differential Equations and Large Linear Systems, Proc. Bielefeld, 1980, Lecture Notes in Mathematics **968**, 1982
5. Henk A.van der Vorst,*Stabilized Incomplete LU-Decompositions as Preconditionings for the Tchebycheff Iteration*, in: D.J.Evans ed., Preconditioning methods: Analysis and Applications, Gordon and Breach, 1983
6. H.A.van der Vorst,*Comparative Performance Tests on the CRAY-1 and CYBER 205*, in: J.van Leeuwen and J.K.Lenstra eds., Parallel computers and computations, CWI Syllabus 9, pp.33-54, 1985
7. H.A.van der Vorst,*Performance of Some Linear Algebra Algorithms in FORTRAN on CYBER 205 Supercomputers*, in: Proc. of 5th Bochumer Colloq. on Vectorcomputers, Bochum, 1985.
8. A. van der Sluis and H.A. van der Vorst,*Numerical solution of large sparse linear algebraic systems arising from tomographic problems*, in: G.Nolet (ed.), Seismic Tomography, Reidel Publishing Company, Dordrecht, 1987
9. H.A. van der Vorst, *(M)ICCG for 2D problems on vectorcomputers*, in: A.Lichnewsky and C.Saguez, Supercomputing, North-Holland, 479 pages, pp.321-334, ISBN 0-44-70320-9, 1988
10. H.A.van der Vorst, *The Convergence Behavior of Some Iterative Solution Methods*, in: Proceedings of the fifth International Symposium on Numerical Methods in Engineering, Vol. 1, Editors: R.Gruber, J.Periaux and R.P.Shaw, Springer Verlag, ISBN 1-85312-041-3, Berlin-etc., 1989, p 61-72
11. M.C.A.van Dijke, H.A.van der Vorst and M.A.Viergever, *On the Relation between ART, Block-ART and SIRT*, in: The Formation, Handling and Evaluation of Medical Images, A.Todd-Pokropek and M.A. Viergever (eds.), Springer-Verlag, Berlin, 1989
12. H.A. van der Vorst, *The convergence behaviour of preconditioned CG and CG-S in the presence of rounding errors*, in: O.Axelsson and L.Yu.Kolotilina (Eds.), Preconditioned Conjugate Gradient Methods, Proceedings, Nijmegen, 1989, Lecture Notes in Mathematics 1457, Springer Verlag, Berlin, 1990
13. M.Driessen and H.A.van der Vorst, *BI-CGSTAB in semiconductor modelling*, in: W. Fichtner and D. Aemmer (eds), "Simulation of Semiconductor Devices and Processes", Vol. **4**, Hartung-Gorre Verlag, Konstanz, pp.45-54, 1991

14. Henk A. van der Vorst, *The use of Bi-CGSTAB for unsymmetric linear systems*, in: Proceedings of International Symposium on Supercomputing, Fukuoka, Japan, 6-8 November 1991, Editor: Masaaki Shimasaki, Kyushu University Press, Kyushu, 1991, pp.206-211

15. H. A. van der Vorst, *Conjugate gradient type methods for nonsymmetric linear systems*, in: R. Beauwens and P. de Groen (eds.), Iterative Methods in Linear Algebra, Proc. of the IMACS Int. Symp. Brussels, 2-4 April 1991, North-Holland, Amsterdam, 1992, pp.67–76

16. G. L. G. Sleijpen and H. A. van der Vorst, *Optimal Iteration Methods for Large Linear Systems of Equations*, in: C. Vreugdenhil and B. Koren, editors, 'Numerical Methods for Advection-Diffusion Problems', Vieweg Verlag, Braunschweig, 1993, Chapter 12, p291-320

17. Henk A. van der Vorst and Gerard G. L. Sleijpen, *The effect of incomplete decomposition preconditioning on the convergence of Conjugate Gradients*, in: Wolfgang Hackbusch and Gabriel Wittum (eds.), 'Incomplete Decompositions (ILU) - Algorithms, Theory, and Applications', Proceedings of the Eighth GAMM-Seminar, Kiel, January 24-26, 1992, Notes on Numerical Fluid Dynamics, Volume 41, Vieweg, Braunschweig, 1993, pp179-187

18. Henk A. van der Vorst, *Minimum Residual Modifications to Bi-CG and Preconditioners*, in: G. Golub, A. Greenbaum, and M. Luskin (eds), 'Recent advances in iterative methods', IMA Volumes in Mathematics and its Applications, Volume 60, Springer Verlag, Berlin etc, 1993, p217-225

19. Jack J. Dongarra and Henk A. van der Vorst, *Performance of Various Computers Using Standard Sparse Linear Equations Solving Techniques*, in: J.J. Dongarra and W. Gentzsch (eds), Computer Benchmarks, Advances in Parallel Computing, Volume 8, North–Holland, Amsterdam, 1993, p177-188.

20. Henk A. van der Vorst, Diederik R. Fokkema, and Gerard L.G. Sleijpen, *Further improvements in nonsymmetric hybrid iterative methods*, in: S. Selberherr, H. Stippel, and E. Strasser (eds.), 'Simulation of Semiconductor Devices and Processes', Vol 5, Springer Verlag, Wien, 1993, p89-92

21. Henk A. van der Vorst, *Parallel aspects of iterative methods*, in: A.E. Fincham, and B. Ford (Ed), 'Proc. IMA Conf. on Parallel Computing', Oxford University Press, Oxford, UK, 1993, p175-186

22. Henk A. van der Vorst, *Recent developments in hybrid CG methods*, in: W. Gentzsch and U. Harms (Eds.), High Performance Computing and Networking, Proceedings International Conference, Munich, April 1994, Volume 2: Networking and Tools, Lecture Notes in Computer Science, 797, Springer Verlag, Berlin etc., 1994, pp. 174–183

23. J.G.L. Booten, P.M. Meijer, H.J.J. te Riele and H.A. van der Vorst, *Parallel Arnoldi method for the construction of a Krylov subspace basis: an application in magnetohydrodynamics*, in: W. Gentzsch and U. Harms (Eds.), High Performance Computing and Networking, Proceedings International Conference, Munich, April 1994, Volume 2: Networking and Tools, Lecture Notes in Computer Science, 797, Springer Verlag, Berlin etc., 1994, pp. 196–201

24. E. de Sturler and H.A. van der Vorst, *Communication Cost Reduction for Krylov Methods on Parallel Computers*, in: W. Gentzsch and U. Harms (Eds.), High Performance Computing and Networking, Proceedings International Conference, Munich, April 1994, Volume 2: Networking and Tools, Lecture Notes in Computer Science, 797, Springer Verlag, Berlin etc., 1994, pp. 190–195

25. S. Poedts, P.M. Meijer, J.P. Goedbloed, H.A. van der Vorst, and A. Jakoby, *Parallel Magnetohydrodynamics on the CM-5*,
in: W. Gentzsch and U. Harms (Eds.), High Performance and Networking, Proceedings International Conference, Munich, April 1994, Volume 1: Applications, Lecture Notes in Computer Science, 796, Springer Verlag, Berlin etc., 1994, pp. 365–370

26. H.A. van der Vorst, *A comparison between ART, CG, and SIRT*,
in: J.D. Brown, M.T. Chu, D.C. Ellison, and R.J. Plemmons (eds.), Proceedings of the Cornelius Lanczos International Centenary Conference, Proceedings in Applied Mathematics **73**, IBSN 0-89871-339-0, SIAM, Philadelphia, 1994, pp. 302–304.

27. G.L.G. Sleijpen, D.R. Fokkema, and H.A. van der Vorst, *BiCGstab(ℓ): an efficient and surprisingly stable solver of nonsymmetric linear equations*,
in: J.D. Brown, M.T. Chu, D.C. Ellison, and R.J. Plemmons (eds.), Proceedings of the Cornelius Lanczos International Centenary Conference, Proceedings in Applied Mathematics **73**, IBSN 0-89871-339-0, SIAM, Philadelphia, 1994, pp. 291–293.

28. H.A. van der Vorst and G.L.G. Sleijpen, *An Introduction to Hybrid Iteration Methods*,
in: W.G. Habashi (ed.), Proceedings of the International Workshop on Solution Techniques for Large-Scale CFD Problems, CERCA, Montreal, September 26–28, 1994, pp. 143–159.

29. G.L.G. Sleijpen, H.A. van der Vorst, and D.R. Fokkema, *How to improve the convergence of hybrid Bi-CG Methods*,
in: W.F. Ames (ed.), "IMACS '94, Proceedings 14th World Congress on Computation and Applied Mathematics, Late Papers Volume, pp.75–78, 1994

30. Gerard L.G. Sleijpen and Henk A. Van der Vorst, *Hybrid Bi-Conjugate Gradient methods for CFD problems*,
in: M. Hafez and K. Oshima (eds), Computational Fluid Dynamics Review 1995, Wiley, Chicester, ISBN 0 471 95589 2, 1995, pp.457–476.

31. Henk A. Van der Vorst, *Parallel Iterative Solution Methods for Linear Systems arising from Discretized PDE's*,
in: AGARD Report R-807, Proc. of Special Course on Parallel Computing in CFD, AGARD, Neuilly-sur-Seine, France, 1995, ISBN 92-836-1025-3, section 3, pp. 1–39.

32. H.A. van der Vorst and G.L.G. Sleijpen, *Hybrid Iteration Solvers and their Application in CFD*,
in: W.G. Habashi (ed.), *Solution Techniques for Large-Scale CFD Problems*, Wiley, Chicester, ISBN 0 471 95810 7, 1995, pp.159–175

33. Z. Bai, D. Day, J. Demmel, J. Dongarra, M. Gu, A. Ruhe, and H. van der Vorst, *Templates for Linear Algebra Algorithms*,
in: Jan van Leeuwen (Ed.), Computer Science Today: Recent Trends and Developments, Lecture Notes in Computer Science 1000, Springer-Verlag, Berlin etc., ISBN 3-540-60105-8, p115-140, 1995.

34. Gerard L.G. Sleijpen and Henk A. Van der Vorst, *The Jacobi-Davidson method for eigenproblems and its relation with accelerated inexact Newton schemes*,
in: Svetozar D. Margenov and Panayot S. Vassilevski, eds, Iterative Methods in Linear Algebra II, Proceedings of the Second IMACS International Symposium, Blagoevgrad, June 17-21, 1995, North-Holland, Amsterdam, 1996.

35. H.A. van der Vorst, *Parallel Linear Solvers: Sparse Iterative Methods*,
in: P. Wesseling (ed.), High Performance Computing in Fluid Dynamics, Kluwer, Dordrecht, 1996, pp.173–200.

36. H.A. van der Vorst, *Parallelism in CG-like Methods*,
in: E. D'Hollander et al, editors, Parallel Computing: State-of-the-Art and Perspectives, Advances in Parallel Computing, Vol. 11, Elsevier North-Holland, Amsterdam, 1996, pp.3–19.

37. A. Booten, D. Fokkema, G. Sleijpen and H. van der Vorst, *Jacobi-Davidson Methods for Generalized MHD-Eigenvalue Problems*,
in: G. Alefeld, O. Mahrenholtz and R. Mennicken (eds), Proceeedings of ICIAM/GAMM 95, ZAMM, **76** (suppl. 1), 1996, pp131-134.

38. H.A. van der Vorst, *Iterative methods for unsymmetric systems*,
in: K.G. Jeffery, J. Král and M. Bartošek (Eds.), SOFSEM'96: Theory and Practice of Informatics, Proceedings, Lecture Note in Computer Science 1175, Springer Verlag, Berlin etc., 1996, pp.217-234.

39. Henk A. van der Vorst and Gerard L.G. Sleijpen, *A parallelizable and fast algorithm for very large generalized eigenproblems*,
in: J. Waśniewski, J. Dongarra, K. Madsen and D. Olesen (Eds), Applied Parallel Computing, Proceedings of PARA '96, Lecture Notes in Computer Science 1184, Springer Verlag, Berlin, 1996, pp.686-696.

40. Henk A. van der Vorst and Tony C. Chan, *Linear System Solvers: Sparse Iterative Solvers*,
in: David E. Keyes, Ahmed Sameh and V. Venkatakrishnan (eds), Parallel Numerical Algorithms, ICASE/LaRC Interdisciplinary Series in Sience and Engineering, Volume 4, Kluwer Academic, Dordrecht, 1997, pp91–118.

41. Tony C. Chan and Henk A. van der Vorst, *Approximate and Incomplete Factorizations*,
in: David E. Keyes, Ahmed Sameh and V. Venkatakrishnan (eds), Parallel Numerical Algorithms, ICASE/LaRC Interdisciplinary Series in Sience and Engineering, Volume 4, Kluwer Academic, Dordrecht, 1997, pp167–202.

42. G.H. Golub and H.A. van der Vorst, *Closer to the solution: iterative linear solvers*,
in: I.S. Duff and G.A. Watson (eds), The State of the Art in Numerical Analysis, Clarendon Press, Oxford, 1997, pp63–92.

43. Henk A. van der Vorst and Gene H. Golub, *150 years old and still alive: eigenproblems*,
in: I.S. Duff and G.A. Watson (eds), The State of the Art in Numerical Analysis, Clarendon Press, Oxford, 1997, pp93–119.

44. Henk A. Van der Vorst, *Iterative Methods for Linear Systems and Implementation on Parallel Computers*,
in: Raymond H. Chan, Tony F. Chan and Gene H. Golub (eds), Iterative Methods in Scientific Computing, Springer Verlag, Singapore, 1997, pp1–44.

45. H.A. Van der Vorst and G.L.G. Sleijpen, *Iterative Bi-CG type methods and implementation results*,
in: G. Winter Althaus and E. Spedicato (eds), "Algorithms for Large Scale Linear Algebraic Systems - Applications in Science and Engineering, NATO ASI Series, Series C: Mathematical and Physical Sciences, Vol 508, Kluwer, Dordrecht, 1998.
ISBN 0-7923-4975-X

46. Henk van der Vorst, 'Subspace Iteration Methods with Preconditioning for Eigenvalues of Very Large Matrices',
in: O.P. Iliev, M.S. Kaschiev, S.D. Margenov, Bl.H. Sendov and P.S. Vassilevski (eds.), "Recent Advances in Numerical Methods and Applications II", Proc. of the Fourth International Conference NMA '98, Sofia, Bulgaria, 19-23 August, 1998, p.124–134.
World Scientific, Singapore, 1999. ISBN 981-02-3827-4

47. Gerard L. G. Sleijpen, H.A. van der Vorst and F. Wubs, 'Preconditioning for Eigenproblems', in: O.P. Iliev, M.S. Kaschiev, S.D. Margenov, Bl.H. Sendov and P.S. Vassilevski (eds.), "Recent Advances in Numerical Methods and Applications II", Proc. of the Fourth International Conference NMA '98, Sofia, Bulgaria, 19-23 August, 1998, p.170–177.
World Scientific, Singapore, 1999. ISBN 981-02-3827-4

48. G.L.G. Sleijpen and H.A. van der Vorst, "How can Hybrid BiCG solvers benefit from the auxiliary system?", in: A. Makinouchi, R. Himeno, and S. Fujino (Eds.), Proceedings of the RIKEN International Symposium on Linear Algebra and its Applications, Tokyo, November 22-24, 1999, RIKEN Institute of Physical and Chemical Research, Tokyo, p.95–104.

49. G.L.G. Sleijpen and H.A. van der Vorst, "Efficient subspace expansion in the Jacobi-Davidson method", in: A. Makinouchi, R. Himeno, and S. Fujino (Eds.), Proceedings of the RIKEN International Symposium on Linear Algebra and its Applications, Tokyo, November 22-24, 1999, RIKEN Institute of Physical and Chemical Research, Tokyo, p.202–208.

50. Henk A. van der Vorst, 'Solution of $f(A)x = b$ with projection methods for the matrix A', in: A. Frommer, T. Lippert, B. Medeke, and K. Schilling (editors), "Numerical Challenges in Lattice Quantum Chromodynamics", Lecture Notes in Computational Science and Engineering. **15**, Springer Verlag, Berlin etc., 2000, pp. 18-28.

51. Mardochée Magolu monga Made and Henk A. van der Vorst, *ParIC: A Family of Parallel Incomplete Cholesky Preconditioners*,
in: M. Bubak, H. Afsarmanesh, R. Williams, and B. Hertzberger (Eds.), High Performance Computing and Networking, 8th International Conference, HPCN Europe 2000, Amsterdam, The Netherlands, May 2000, Proceedings,
Lecture Notes in Computer Science, 1823, Springer Verlag, Berlin etc., 2000, pp. 89–98

52. Henk A. van der Vorst, ‚Efficient and accurate iterative methods for linear systems', in: M. Deville and R. Owens (editors), Proceedings of the 16th IMACS World Congress 2000, Lausanne - August 21-25, 2000, on CD-ROM ISBN 3-9522075-1-9, directory Ks/Ks8, 10 pages, EPFL, Lausanne, 2000

53. G. Sleijpen and H. van der Vorst, Jacobi-Davidson Methods (Section 4.7), in Z. Bai, J.J. Demmel, J.J. Dongarra, A. Ruhe, and H.A. van der Vorst, *Templates for the Solution of Algebraic Eigenvalue Problems - A Practical Guide*, pages 88-105, SIAM, Philadelphia, Pa., 2000.

54. G. Sleijpen and H. van der Vorst, Jacobi-Davidson Methods (Section 5.6), in Z. Bai, J.J. Demmel, J.J. Dongarra, A. Ruhe, and H.A. van der Vorst, *Templates for the Solution of Algebraic Eigenvalue Problems - A Practical Guide*, pages 123-127, SIAM, Philadelphia, Pa., 2000.

55. G. Sleijpen and H. van der Vorst, Jacobi-Davidson Methods (Section 7.12), in Z. Bai, J.J. Demmel, J.J. Dongarra, A. Ruhe, and H.A. van der Vorst, *Templates for the Solution of Algebraic Eigenvalue Problems - A Practical Guide*, pages 221-228, SIAM, Philadelphia, Pa., 2000.

56. G. Sleijpen and H. van der Vorst, Jacobi-Davidson Methods (Section 8.4), in Z. Bai, J.J. Demmel, J.J. Dongarra, A. Ruhe, and H.A. van der Vorst, *Templates for the Solution of Algebraic Eigenvalue Problems - A Practical Guide*, pages 238-246, SIAM, Philadelphia, Pa., 2000.

57. Z. Bai, G. Sleijpen and H. van der Vorst, Quadratic Eigenvalue Problems (Section 9.2), in Z. Bai, J.J. Demmel, J.J. Dongarra, A. Ruhe, and H.A. van der Vorst, *Templates for the Solution of Algebraic Eigenvalue Problems - A Practical Guide*, pages 281-289, SIAM, Philadelphia, Pa., 2000.

58. H. van der Vorst, A Brief Survey of Iterative Linear Solvers (Section 10.4), in Z. Bai, J.J. Demmel, J.J. Dongarra, A. Ruhe, and H.A. van der Vorst, *Templates for the Solution of Algebraic Eigenvalue Problems - A Practical Guide*, pages 332-334, SIAM, Philadelphia, Pa., 2000.

59. Wim Bomhof and Henk A. van der Vorst, "A Parallelizable GMRES-type method for p-cyclic Matrices, with Applications in Circuit Simulation", to appear in Proceedings of SCEE-2000, August 20-23, 2000, Warnemünde, Springer Verlag, Berlin, etc.

60. Henk A. van der Vorst, "Subspace acceleration and preconditioning for large sparse linear systems", to appear in the Proceedings of HERCMA 2001, Athens, September 2001.

61. H.A. van der Vorst, "Computational Methods for Large Eigenvalue Problems", in: P.G. Ciarlet and J.L. Lions (eds.), Handbook of Numerical Analysis, Vol. VIII, North-Holland, Amsterdam, pp.3-182, 2001.

Books and Edited Proceedings

1. H.A.van der Vorst, Preconditioning by Incomplete Decompositions, Ph.D.Thesis, Utrecht University, 1982
2. H.J.J. te Riele, Th.J. Dekker and H.A. van der Vorst (eds), Algorithms and Applications on Vector and Parallel Computers, Vol.3 in Special Topics in Supercomputing,North-Holland, Amsterdam, etc. ,1987
3. H.A. van der Vorst, Parallel Rekenen en Supercomputers, Academic Service, Schoonhoven, 1988, ISBN 90-6233-300-1, 175 paginas
4. H.A.van der Vorst and P.van Dooren (eds.), Special issue parallel algo- rithms for Numerical Linear Algebra, Journal of Comp. and Appl. Math., Vol **27**, Numbers 1&2, September 1989
5. H.A.van der Vorst and P.van Dooren (eds.), Parallel Algorithms for Numerical Linear Algebra, Volume 1 in: Advances in Parallel Computing, Elsevier Science Pub., Amsterdam, 1990, ISBN: 0444 88621 4, 330 pages
6. J.Dongarra, I.Duff, D.Sorenson and H.van der Vorst, Solving linear systems on vector and shared memory computers, SIAM, Philadelphia, PA., 1991,
   (2-nd print: 1993; Japanese translation: 1993) ISBN 0-89871-270-X, 266 pages
7. H.J.J. te Riele, T.J. Dekker and H.A. van der Vorst (eds), *Selected papers CWI-IMACS Symposia on Parallel Scientific Computing Amsterdam, Netherlands*, in: Applied Numerical Mathematics, **7**, 1991, pp.367-452
8. H.J.J. te Riele, T.J. Dekker and H.A. van der Vorst (eds), *Selected papers CWI-IMACS Symposia on Parallel Scientific Computing Amsterdam, Netherlands*, in: Applied Numerical Mathematics, **8**, 1991, pp91-192
9. H.J.J. te Riele, T.J. Dekker and H.A. van der Vorst (eds), *Selected papers CWI-IMACS Symposia on Parallel Scientific Computing Amsterdam, Netherlands*, in: Applied Numerical Mathematics, **10**, 1992, pp1–86
10. Richard Barrett, Michael Berry, Tony Chan, James Demmel, June Donato, Jack Dongarra, Victor Eijkhout, Roldan Pozo, Charles Romine, and Henk van der Vorst, *Templates for the solution of linear systems: Building Blocks for Iterative Methods*,
    SIAM, Philadelphia, 1994 (second printing (revised): 1996), Japanese translation: 1996
11. H.J.J. te Riele and H.A. van der Vorst (eds), *Special issue on Massively Parallel Computing and Applications*, in: Applied Numerical Mathematics, **19**, 1995, pp1-171.
12. J. Dongarra, I. Duff, D. Sorenson and H. van der Vorst, *Numerical Linear Algebra for High-Performance Computers*, SIAM, Philadelphia, Pa., 1998
    ISBN 0-89871-428-1, xviii+342 pages
13. Z. Bai, J.J. Demmel, J.J. Dongarra, A. Ruhe, and H.A. van der Vorst, *Templates for the Solution of Algebraic Eigenvalue Problems - A Practical Guide*, SIAM, Philadelphia, Pa., 2000
    ISBN 0-89871-471-0, xxx+410 pages
14. A. Hadjidimos, H. van der Vorst, and P. Van Dooren (editors), Special Issue: Numerical Analysis 2000, Vol. III: Linear Algebra, Journal of Comp. and Appl. Math, Vol 123 (1-2), pages 1-532, 2000.
    also as book: ISBN 0 444 50598 9, 2000, Elsevier Science, Amsterdam.
15. Y. Saad, O. Axelsson, I. Duff, W.P. Tang, H. van der Vorst, and A. Wathen (editors), Special Issue: Preconditioning Techniques for Large Sparse Matrix Problems in Industrial Applications, SPARSE '99, Numerical Lin. Alg. with Appl, **7** (7-8), pages 489-762, 2000.

Pre-prints and reports

1. H.A.van der Vorst, *'Automatical Numerical Quadrature'*, Report RCN- 70-175, Reactor Centrum Nederland, Petten, 1970.
2. H.A.van der Vorst,*'The calculation of the complementary Error-function and its inverse'*, Report RCN-160, Reactor Centrum Nederland, Petten, 1971.
3. H.A.van der Vorst, *'A simple method for the construction of splines with piecewise pre-described surfaces over given intervals'*,
Report RCN-169, Reactor Centrum Nederland, Petten, 1972.
4. J.A.Meijerink and H.A.van der Vorst, *'Iterative Solution of Linear Systems Arising from Discrete Approximations to Partial Differential Equations'*, Report ACCU-Reeks **11**, Academisch Computer Centrum, Utrecht, October 1974.
5. J.M.van Kats and H.A.van der Vorst,*'Numerical Results of the Paige-Style Lanczos method for the Computation of Extreme Eigenvalues of Large Sparse Matrices'*, Report TR-3, Academisch Computer Centrum, Utrecht, 1977
6. J.M.van Kats and H.A.van der Vorst,*'Automatic Monitoring of Lanczos Schemes for Symmetric or Skew-Symmetric Generalized Eigenvalue Problems'*, Report TR-7, Academisch Computer Centrum Utrecht, 1977
7. H.A.van der Vorst and J.M.van Kats,*'Manteuffel's Algorithm with Preconditioning for the Iterative Solution of Certain Sparse Linear Systems with a Non-Symmetric Matrix'*, Report TR-11, Academisch Computer Centrum Utrecht,1979
8. H.A.van der Vorst,*'Comparative Performance Tests on the CRAY-1 and the CYBER 205'*, Report TR-15, Academisch Computer Centrum, Utrecht, 1983
9. H.A.van der Vorst and J.M.van Kats,*'The Performance of Some Linear Algebra Algorithms in Fortran on CRAY-1 and CYBER 205 Supercomputers'*, Report TR-17, Academisch Computer Centrum Utrecht, 1984
10. J.J.F.M.Schlichting and H.A. van der Vorst,*Solving bidiagonal systems of linear equations on the CDC CYBER 205*,
Report NM-R8725, November 1987, CWI Amsterdam
11. Huang Yunqin and Henk van der Vorst,'Some observations on the convergence behavior of GMRES', Report 89-09, Delft University of Techn. 1989
12. M.C.van Dijke, H.A.van der Vorst en M.A.Viergever, Iteratieve methoden in de beeldreconstructie: de relatie tussen ART, Block-ART en SIRT, Report 89-82, Delft University of Technology, 1989 Elsevier Science Pub., Amsterdam, 1990, ISBN: 0444 88621 4, 330 pages
13. M.C.A. van Dijke, M.A.Viergever and H.A.van der Vorst, 'Iterative methods for sparse linear systems arising from tomographic image reconstruction: the relations between ART, SIRT and CG', Report 90-51, Delft University of Technology, 1990
14. H.A. van der Vorst and P.Sonneveld, 'CGSTAB: A more smoothly converging variant of CG-S', Report 90-50, Delft University of Technology, 1990
15. Henk A. van der Vorst, 'Lecture notes on iterative methods', report TR/PA/92/75, CERFACS, Toulouse, 1992
16. Henk A. van der Vorst and Paul Smit, 'A Lanczos process for internal eigenvalues', Preprint 750, Dept. of Math., University Utrecht, October 1992.

17. G. L. G. Sleijpen and H. A. van der Vorst, 'Krylov subspace methods for large linear systems of equations', Preprint 803, Dept. of Math., University Utrecht, 1993

18. J.G.L. Booten, H.A. van der Vorst, P.M. Meijer, and H.J.J. te Riele, 'A preconditioned Jacobi-Davidson method for solving large generalized eigenvalue problems', CWI Report NM-R9414, July 1994.

19. Mikhail A. Botchev, Gerard L.G. Sleijpen and Henk A. van der Vorst, 'Low-dimensional Krylov subspace iterations for enhancing stability of time-step integration schemes', Preprint 1004, Department of Mathematics, University Utrecht, 1997.

20. I.S. Duff and H.A. van der Vorst, 'Preconditioning and Parallel Preconditioning', Report RAL-TR-1998-052, Rutherford Appleton Lab., July 22, 1998.

21. M. Genseberger, G. Sleijpen and Henk van der Vorst, 'Using domain decomposition in the Jacobi-Davidson method', Preprint 1164, Department of Mathematics, University Utrecht, October 2000. (submitted)

22. M. E. Hochstenbach and H. A. van der Vorst, 'Alternatives to the Rayleigh quotient for the quadratic eigenvalue problem', Preprint 1212, Department of Mathematics, University Utrecht, November 2001.

Other publications (in Dutch)

1. H.A. van der Vorst en P. Wesseling, *De toekomst van het wetenschappelijk rekenen*, Feestbundel S.H.B.D., Stichting Hogere Beroepsopleidingen, Delft, juni 1987, pp.21-38

2. H.A. van der Vorst, 'Een kwart eeuw numerieke wiskunde in Utrecht', Proc. Numerieke Wiskunde Symposium Utrecht, 15 november 1988 , Utrecht

3. Henk van der Vorst, *Op zoek naar de oplossing*, Oratie, Rijks Universiteit Utrecht, 13 maart 1991

4. Henk van der Vorst, "Gedachten over de mathematisering van de samenleving gezien 'vanuit de Wiskunde' ", in: Wiskunde in Nederland - Drie essays, uitgave: Overlegcommissie Verkenningen, Amsterdam, februari 1996.

5. H.A. van der Vorst, 'Software recensie: Software voor grote ijle lineaire stelsels', ITW Nieuws, Jaargang 7, Nr. 4, 1997, pag. 21-24

6. Henk van der Vorst, 'De juiste maat', Nieuw Archief voor de Wiskunde, vijfde serie, 1 (4), 2000, pag. 425

7. H. A. van der Vorst, 'Snel oplossen is een experiment waard', CWI Syllabus, **49**, CWI, Amsterdam, pp.49-59

Book Reviews

(since 1/1/94; no data collected before that date)

1. C.A.J. Fletcher, *Computational techniques for Fluid Dynamics*, Vol I & II, Springer Verlag, 1991. in: Mededelingen van het WG, 37, (1), januari 1994, p32–35

2. T.L. Freeman and C. Phillips, *Parallel Numerical Algorithms*, Prentice Hall, New York, 1992. in: SIAM Review, **36**, 1994, p678–679

3. W. Hackbusch, *Elliptic Differential Equations*, Springer Series in Computational Mathematics **18**, Springer-Verlag, Berlin, 1992, in: Mededelingen van het Wiskundig Genootschap, Jaargang 38, nr 6, p236-237, 1995.

4. A. Quarteroni and A. Valli, *Numerical Approximation of Partial Differential Equations*, Springer Verlag, Berlin, 1994, in: Optima, Mathematical Programming Society Newsletter, No. 47, 1995, p12-13

5. C.L. Lawson and R.J. Hanson, *Solving Least Squares Problems*, SIAM, Philadelphia, 1995, in: ITW-Nieuws, Jaargang 6, nummer 2, juni 1996, p17-18.

6. B. Fornberg, *A Practical Guide to Pseudospectral Methods*, Cambridge UP, 1996. $38. 231p. ISBN 0-521-49582-2, hc. in: ITW-Nieuws, Jaargang 7, nummer 1, maart 1997, p23.

7. R. Weiss, *Parameter-Free Iterative Linear Solvers*, Akademie-Verlag, Berlin, 1996, DM98, 217p. in: ITW-Nieuws, Jaargang 7, nummer 1, maart 1997, p25.

8. M.T. Heath, *Scientific Computing*, McGraw-Hill, 1996, £57, 408p. in ITW-Nieuws, Jaargang 7, nummer 4, december 1997, p21.

9. H.W. Engl and M. Hancke, *Regularization of Inverse Problems*, Kluwer, Dordrecht, 1992, in: Mededelingen van het Wiskundig Genootschap, Jaargang 41, nr 3, p118-119, 1998.

10. A. Greenbaum, *Iterative Methods for Solving Linear Systems*, SIAM, Philadelphia, 1997. in: SIAM Review 40(4), pp1019-1021, 1998.

11. A. Iserles (ed), *Acta Numerica*, Cambridge UP, 1997, £38, 551p. in: ITW-Nieuws, Jaargang 8, nummer 1, april 1998, p23.

12. Z.C. Li, *Combined methods for elliptic equations with singularities, interfaces and infinities*, Dordrecht: Kluwer, 1998. 476 p., prijs NLG 395,- in: Nieuw Archief voor Wiskunde, Vijfde serie, deel 1, nummer 2, juni 2000, p.199-200.

13. G. Meurant, *Computer solution of large linear systems*, Amsterdam: Elsevier, 1999, 753 p., prijs NLG 295,- in: Nieuw Archief voor Wiskunde, Vijfde serie, deel 1, nummer 4, december 2000, p.441-442.