

Sven Hammarling's Bibliography

BOOKS

- [1] S. Hammarling. *Latent Roots and Latent Vectors*. Adam Hilger, Bristol, UK, 1970. (Also published by The University of Toronto Press).
- [2] M. G. Cox and S. Hammarling, editors. *Reliable Numerical Computation*. Oxford University Press, Oxford, UK, 1990.
- [3] E. Anderson, Z. Bai, C. H. Bischof, J. Demmel, J. J. Dongarra, J. Du Croz, A. Greenbaum, S. Hammarling, A. McKenney, S. Ostrouchov, and D. C. Sorensen. *LAPACK Users' Guide*. SIAM, Philadelphia, PA, USA, 1992.
- [4] E. Anderson, Z. Bai, C. H. Bischof, J. Demmel, J. J. Dongarra, J. Du Croz, A. Greenbaum, S. Hammarling, A. McKenney, S. Ostrouchov, and D. C. Sorensen. *LAPACK Users' Guide*. SIAM, Philadelphia, PA, USA, 2nd edition, 1995. (Also available in Japanese, published by Maruzen, Tokyo, translated by Dr Oguni.).
- [5] L. S. Blackford, J. Choi, A. Cleary, E. D'Azevedo, J. Demmel, I. Dhillon, J. J. Dongarra, S. Hammarling, G. Henry, A. Petitet, K. Stanley, D. W. Walker, and R. C. Whaley. *ScaLAPACK Users' Guide*. SIAM, Philadelphia, PA, USA, 1997. (Includes a CD containing the software, an HTML version of the Guide and LAPACK Working Notes.) <http://www.netlib.org/scalapack/slug/>.
- [6] E. Anderson, Z. Bai, C. H. Bischof, S. Blackford, J. Demmel, J. J. Dongarra, J. Du Croz, A. Greenbaum, S. Hammarling, A. McKenney, and D. C. Sorensen. *LAPACK Users' Guide*. SIAM, Philadelphia, PA, USA, 3rd edition, 1999. <http://www.netlib.org/lapack/lug/>.
- [7] V. A. Barker, S. Blackford, J. J. Dongarra, J. Du Croz, S. Hammarling, M. Marinova, J. Waśniewski, and P. Yalamov. *LAPACK95 Users' Guide*. SIAM, Philadelphia, PA, USA, 2001. (www.netlib.org/lapack95/lug95/).

PAPERS

- [1] S. Hammarling. A note on modifications to the Givens plane rotation. *J. Inst. Maths Applies*, 13:215–218, 1974.
- [2] S. Hammarling and B. A. Wichmann. Numerical packages in Ada. In J. K. Reid, editor, *The Relationship Between Numerical Computation and Programming Languages*, pages 225–244. North-Holland, Amsterdam, The Netherlands, 1982.
- [3] S. Hammarling. Numerical solution of the stable, non-negative definite Lyapunov equation. *IMA J. of Num. Anal.*, 2:303–323, 1982. (Reprinted as [41]. See also [31]).

- [4] Å. Björck and S. Hammarling. A Schur method for the square root of a matrix. *Linear Algebra Appl.*, 52/53:127–140, 1983.
- [5] S. Hammarling. How to live without covariance matrices: Numerical stability in multivariate statistical analysis. *NAG Newsletter*, 1:6–31, 1983.
- [6] S. Hammarling and M. A. Singer. A canonical form for the algebraic Riccati equation. In P. A. Fuhrmann, editor, *Mathematical Theory of Networks and Systems*. Springer-Verlag, Berlin, Germany, 1984.
- [7] S. Hammarling. The singular value decomposition in multivariate statistics. *ACM Signum Newsletter*, 20:2–25, 1985.
- [8] J. J. Dongarra, L. Kaufman, and S. Hammarling. Squeezing the most out of eigenvalue solvers on high-performance computers. *Linear Algebra Appl.*, 77:113–136, 1986.
- [9] S. Hammarling. The numerical solution of the Kalman filtering problem. In C. I. Byrnes and A. Lindquist, editors, *Computational and Combinatorial Methods in Systems Theory*, pages 23–36. North-Holland, Amsterdam, The Netherlands, 1986.
- [10] J. Du Croz and S. Hammarling. Eigenvalue problems. In J. L. Mohamed and J. E. Walsh, editors, *Numerical Algorithms*, pages 29–60. Oxford University Press, Oxford, UK, 1986.
- [11] K. V. Fernando and S. Hammarling. Systolic array computation of the SVD of complex matrices. In J. M. Speiser, editor, *Advanced Algorithms and Architectures for Signal Processing*, pages 54–61. SPIE, Proceedings 696, The Society of Photo-Optical Engineers, Bellingham, WA, USA, 1987.
- [12] S. Hammarling. The numerical solution of the general Gauss-Markov linear model. In T. S. Durrani, J. B. Abbiss, J. E. Hudson, R. N. Madan, J. G. McWhirter, and T. A. Moore, editors, *Mathematics in Signal Processing*, pages 441–456. Oxford University Press, Oxford, UK, 1987.
- [13] K. V. Fernando and S. Hammarling. On block Kogbetliantz methods for computation of the SVD. In Ed. F. Deprettere, editor, *SVD and Signal Processing: Algorithms, Applications and Architectures*, pages 349–356. North-Holland, Amsterdam, The Netherlands, 1988.
- [14] K. V. Fernando and S. Hammarling. A product induced singular value decomposition (IISVD) for two matrices and balanced realization. In B. N. Datta, C. R. Johnson, M. A. Kaashoek, R. J. Plemmons, and E. D. Sontag, editors, *Linear Algebra in Signals, Systems, and Control*, pages 128–140. SIAM, Philadelphia, PA, USA, 1988.
- [15] J. Du Croz and S. Hammarling. The NAG Library and supercomputers. In L. P. Kartashev and S. I. Kartashev, editors, *Supercomputing '88*. International Supercomputing Institute Inc, 1988. (Proceedings of the Third International Conference on Supercomputing).
- [16] J. J. Dongarra, J. Du Croz, S. Hammarling, and R. J. Hanson. An extended set of FORTRAN Basic Linear Algebra Subprograms. *ACM Trans. Math. Software*, 14:1–32, 399, 1988. (Algorithm 656. See also [17]).

- [17] J. J. Dongarra, J. Du Croz, S. Hammarling, and R. J. Hanson. Corrigenda: “An extended set of FORTRAN Basic Linear Algebra Subprograms”. *ACM Trans. Math. Software*, 14:399, 1988. (See also [16]).
- [18] S. Hammarling. A linear algebra library for high performance computers. In *The Design and Application of Parallel Digital Processors*. IEE, London, 1988. (IEE Conference Publication No.298).
- [19] J. J. Dongarra, J. Du Croz, I. S. Duff, and S. Hammarling. A proposal for a set of Level 3 Basic Linear Algebra Subprograms. In G. Rodrigue, editor, *Parallel Processing for Scientific Computing*, pages 40–44. SIAM, Philadelphia, PA, USA, 1989. (Proceedings of the Third SIAM Conference).
- [20] K. V. Fernando and S. Hammarling. Parallel eigenvalue and singular value algorithms for signal processing. In M. Wright, editor, *Aspects of Computation on Asynchronous Parallel Processors*, pages 13–22. North-Holland, Amsterdam, The Netherlands, 1989.
- [21] J. Demmel, J. J. Dongarra, J. Du Croz, A. Greenbaum, S. Hammarling, and D. C. Sorensen. A project for developing a linear algebra library for high-performance computers. In M. Wright, editor, *Aspects of Computation on Asynchronous Parallel Processors*, pages 87–92. North-Holland, Amsterdam, The Netherlands, 1989.
- [22] K. V. Fernando and S. Hammarling. Comments on “Solving the generalized eigenvalue problem with singular forms”. *Proc. IEEE*, 75:494, 1989.
- [23] J. J. Dongarra, D. C. Sorensen, and S. Hammarling. Block reduction of matrices to condensed forms for eigenvalue computations. *J. Comput. Appl. Math.*, 27:215–227, 1989. (This volume has been collected together in H. A. van der Vorst and P. Van Dooren, editors. *Parallel Algorithms for Numerical Linear Algebra*. North-Holland, Amsterdam, The Netherlands, 1990).
- [24] J. J. Dongarra, J. Du Croz, I. S. Duff, and S. Hammarling. A set of Level 3 Basic Linear Algebra Subprograms. *ACM Trans. Math. Software*, 16:1–28, 1990. (Algorithm 679).
- [25] J. J. Dongarra and S. Hammarling. Evolution of numerical software for dense linear algebra. In M. G. Cox and S. Hammarling, editors, *Reliable Numerical Computation*, pages 297–327. Oxford University Press, Oxford, UK, 1990.
- [26] E. Anderson, Z. Bai, C. H. Bischof, J. Demmel, J. J. Dongarra, J. Du Croz, A. Greenbaum, S. Hammarling, A. McKenney, and D. C. Sorensen. LAPACK: A portable linear algebra library for high-performance computers. In J. Martin, editor, *Proceedings of Supercomputer '90*, pages 2–11. IEEE Press, New York, NY, USA, 1990.
- [27] S. Hammarling. Parallel algorithms for singular value problems. In G. H. Golub and P. Van Dooren, editors, *Numerical Linear Algebra, Digital Signal Processing and Parallel Algorithms*, pages 173–187. NATO ASI Series, F70, Springer-Verlag, Berlin, Germany, 1991.
- [28] S. Hammarling and A. Bartlett. The NAG/SERC image processing algorithms library. In A. Barrett, editor, *Computer Vision and Image Processing*, pages 276–286. Chapman and Hall, London, UK, 1991.

- [29] S. Hammarling and K. McDonald. Parallel algorithms at NAG Ltd. In *Proceedings of Supercomputing Europe '93*, pages 137–139. The Royal Dutch Fairs, Utrecht, The Netherlands, 1993.
- [30] S. Hammarling. Standards for scientific languages and library modules. In T. Elliman and C. Sanger, editors, *Open Systems for Europe*, pages 161–164. Chapman and Hall, London, UK, 1991.
- [31] S. Hammarling. Numerical solution of the discrete-time, convergent, non-negative definite Lyapunov equation. *Systems and Control Letters*, 17:137–139, 1991.
- [32] S. Hammarling. The Basic Linear Algebra Subprograms. *WGS Newsletter*, 91(7), 1991.
- [33] J. J. Dongarra, S. Hammarling, and J. H. Wilkinson. Numerical considerations in computing invariant subspaces. *SIAM J. Matrix Anal. Appl.*, 13:145–161, 1992.
- [34] A. van den Boom, A. Brown, F. Dumortier, A. Geurts, S. Hammarling, R. Kool, M. Vanbegin, P. Van Dooren, and S. Van Huffel. SLICOT, a subroutine library in control and systems theory. In H. A. Barker, editor, *Computer Aided Design in Control Systems*, pages 71–76. Pergamon Press, Oxford, UK, 1992. (Proceedings of the IFAC Symposium, Swansea, July 1991).
- [35] A. van den Boom, S. Hammarling, W. Renes, P. Van Dooren, and A. Varga. Integrating CACSD packages and control libraries; towards more flexible and versatile CACSD. In *Proceedings of the 1992 IEEE Symposium on Computer-Aided Control System Design (CACSD)*, pages 62–67. IEEE Press, New York, NY, USA, 1992.
- [36] S. P. Datarina, J. Du Croz, S. Hammarling, and M. W. Pont. A proposed specification of BLAS routines in C. *The J. of C Language Translation*, 3:295–309, 1992.
- [37] S. Hammarling. Wilkinson, James H. In A. Ralston and E. D. Reilly, editors, *Encyclopedia of Computer Science*, pages 1431–1432. Van Nostrand Reinhold, New York, NY, USA, 3rd edition, 1993.
- [38] S. Hammarling, N. J. Higham, and B. Kågström. Report on the CERFACS workshop on reliability of computations. *SIAM News*, 26(4):16, 1993.
- [39] S. Hammarling. James Hardy Wilkinson. In *SIAM 1994 Calendar*, page September. SIAM, Philadelphia, PA, USA, 1994.
- [40] S. Hammarling. Development of numerical software libraries for vector and parallel machines. In A. E. Fincham and B. Ford, editors, *Parallel Computation*, pages 11–35. Oxford University Press, Oxford, UK, 1993.
- [41] S. Hammarling. Numerical solution of the stable non-negative definite Lyapunov equation. In R. V. Patel, A. J. Laub, and P. M. Van Dooren, editors, *Numerical Linear Algebra Techniques for Systems and Control*, pages 500–516. IEEE Press, New York, NY, USA, 1994.
- [42] S. Hammarling. Parallel library work at NAG. In J. J. Dongarra and B. Tourancheau, editors, *Environments and Tools for Parallel Scientific Computing*, pages 172–182. SIAM, Philadelphia, PA, USA, 1994. (Proceedings of the Second Workshop, Townsend, TN, USA).

- [43] S. Hammarling. The challenge of portable libraries for high performance machines. In J. J. Dongarra and J. Waśniewski, editors, *Parallel Scientific Computing*, pages 270–286. Springer-Verlag, Berlin, Germany, 1994. (Proceedings of the First International Workshop, PARA '94, Lyngby, Denmark).
- [44] J. J. Dongarra, J. Du Croz, S. Hammarling, J. Waśniewski, and A. Zemla. A proposal for a Fortran 90 interface for LAPACK. In J. J. Dongarra, K. Masden, and J. Waśniewski, editors, *Applied Parallel Computing*, pages 158–165. Springer-Verlag, Berlin, Germany, 1995. (Proceedings of the Second International Workshop, PARA '95, Lyngby, Denmark).
- [45] J. Demmel, J. J. Dongarra, S. Hammarling, S. Ostrouchov, and K. Stanley. The dangers of heterogeneous network computing: Heterogenous networks considered harmful. In *Proceedings Heterogeneous Computing Workshop '96*, pages 64–71. IEEE Computer Society Press, Los Alamitos, CA, USA, 1996.
- [46] S. Hammarling and N. J. Higham. How to prepare a poster. *SIAM News*, 29(4):20, 19, 1996.
- [47] J. J. Dongarra, J. Du Croz, S. Hammarling, J. Waśniewski, and A. Zemla. LAPACK for Fortran 90. *Appl. Maths. and Comp. Sci.*, 6:101–109, 1996.
- [48] L. S. Blackford, J. Choi, A. Cleary, J. Demmel, I. Dhillon, J. J. Dongarra, S. Hammarling, G. Henry, A. Petitet, K. Stanley, D. W. Walker, and R. C. Whaley. Scalapack: A portable linear algebra library for distributed memory computers - design issues and performance. In *Proceedings of Supercomputing '96*. Sponsored by ACM SIGARCH and IEEE Computer Society, 1996. (ACM Order Number: 415962, IEEE Computer Society Press Order Number: RS00126.) <http://www.supercomp.org/sc96/proceedings/>.
- [49] L. S. Blackford, A. Cleary, J. Demmel, I. Dhillon, J. J. Dongarra, S. Hammarling, A. Petitet, H. Ren, K. Stanley, and R. C. Whaley. Practical experience in the dangers of heterogeneous computing. In J. Waśniewski, J. J. Dongarra, K. Madsen, and D. Olesen, editors, *Applied Parallel Computing: Industrial Computation and Optimization*, pages 57–64. Springer-Verlag, Berlin, Germany, 1996. (Proceedings of the Third International Workshop, PARA '96, Lyngby, Denmark).
- [50] J. J. Dongarra, S. Hammarling, and D. W. Walker. Key concepts for parallel out-of-core LU factorization. *Scientific Programming*, 5:173–184, 1996.
- [51] J. J. Dongarra, S. Hammarling, and A. Petitet. Case studies on the development of ScaLAPACK and the NAG numerical PVM library. In R. F. Boisvert, editor, *The Quality of Numerical Software: Assessment and Enhancement*, pages 236–248. Chapman and Hall, London, UK, 1997. (Proceedings of the IFIP TC2/WG 2.5 Working Conference, Oxford, UK, 8-12 July, 1996).
- [52] L. S. Blackford, J. Choi, A. Cleary, E. D’Azevedo, J. Demmel, I. Dhillon, J. J. Dongarra, S. Hammarling, G. Henry, A. Petitet, K. Stanley, D. W. Walker, and R. C. Whaley. ScaLAPACK: A linear algebra library for message-passing computers. In M. Heath, V. Torczon, G. Astfalk, P. E. Bjørstad, A. H. Karp, C. H. Koebel, V. Kumar, R. F. Lucas, L. T. Watson, and D. E. Womble, editors, *Parallel Processing for Scientific Computing*. SIAM, Philadelphia, PA, USA, 1997. (Proceedings of the Eighth SIAM Conference).

- [53] L. S. Blackford, J. J. Dongarra, J. Du Croz, S. Hammarling, and J. Waśniewski. A further proposal for a Fortran 90 interface for LAPACK. In M. Heath, V. Torczon, G. Astfalk, P. E. Bjørstad, A. H. Karp, C. H. Koebel, V. Kumar, R. F. Lucas, L. T. Watson, and D. E. Womble, editors, *Parallel Processing for Scientific Computing*. SIAM, Philadelphia, PA, USA, 1997. (Proceedings of the Eighth SIAM Conference).
- [54] A. Krommer, M. Derakhshan, and S. Hammarling. Solving PDE problems on parallel and distributed computer systems using the NAG parallel library. In B. Hertzberger and P. Sloot, editors, *High-Performance Computing and Networking*, pages 440–451. Springer-Verlag, Berlin, Germany, 1997. (Proceedings of HPCN Europe '97, Vienna, Austria, April 1997).
- [55] M. Derakhshan, S. Hammarling, and A. Krommer. PINEAPL: A European project on parallel industrial numerical applications and portable libraries. In M. Bubak, J. J. Dongarra, and J. Waśniewski, editors, *Recent Advances in Parallel Virtual Machine and Message Passing Interface*, pages 337–342. Springer, Berlin, Germany, 1997. (Proceedings of the 4th European PVM/MPI Users' Group Meeting, Cracow, Poland, November 1997).
- [56] L. S. Blackford, A. Cleary, J. Demmel, I. Dhillon, J. J. Dongarra, S. Hammarling, A. Petit, H. Ren, K. Stanley, and R. C. Whaley. Practical experience in the numerical dangers of heterogeneous computing. *ACM Trans. Math. Software*, 23:133–147, 1997.
- [57] J. J. Dongarra, S. Hammarling, and D. W. Walker. Key concepts for parallel out-of-core *LU* factorization. *Computers & Mathematics with Applications*, 35:13–31, 1998.
- [58] G. Kaplan. An interview with Sven Hammarling. *IEEE Spectrum*, pages 60–61, Jan 2000.
- [59] S. Hammarling. Modern software for numerical linear algebra. In Aspen Technology, editor, *AspenWorld 2000 Proceedings*, page CD 1. Aspen Technology, Inc, Cambridge, MA, USA, 2000. (Proceedings of AspenWorld 2000, Orlando, Florida, USA).
- [60] S. Hammarling. The NAG libraries for high performance computing. In ?, editor, *NAS2000 Proceedings*, pages 63–66. NAS2000, 2000. (Proceedings of NAS2000, Nasu, Japan).
- [61] BLAS Technical Forum. Basic Linear Algebra Subprograms Technical (BLAST) Forum Standard I. *Int. J. High Perform. Comput. Applic.*, 16(1–111), 2002.
- [62] BLAS Technical Forum. Basic Linear Algebra Subprograms Technical (BLAST) Forum Standard II. *Int. J. High Perform. Comput. Applic.*, 16(115–199), 2002.
- [63] L. S. Blackford, J. Demmel, J. J. Dongarra, I. S. Duff, S. Hammarling, G. Henry, M. Heroux, L. Kaufman, A. Lumsdaine, A. Petit, R. Pozo, K. Remington, and R. C. Whaley. An updated set of Basic Linear Algebra Subprograms (BLAS). *ACM Trans. Math. Software*, 28:135–151, 2002.
- [64] S. Van Huffel, V. Sima, A. Varga, S. Hammarling, and F. Delebecque. High-performance numerical software for control. *IEEE Control Systems Magazine*, pages 60–76, February 2004.
- [65] S. Hammarling. An introduction to the quality of computed solutions. In B. Einarsson, editor, *Accuracy and Reliability in Scientific Computing*, pages 43–76. SIAM, Philadelphia, PA, USA, 2005. (Accompanying web site for book: <http://www.nsc.liu.se/wg25/book/>).

LAPACK Working Notes

- [1] J. Demmel, J. J. Dongarra, J. Du Croz, A. Greenbaum, S. Hammarling, and D. C. Sorensen. Prospectus for the development of a linear algebra library for high-performance computers. LAPACK Working Note No.1. Technical Memorandum 97, Mathematics and Computer Science Division, Argonne National Laboratory, Argonne, Illinois 60439, USA, 1987. <http://www.netlib.org/lapack/lawns/downloads/>.
- [2] J. J. Dongarra, S. Hammarling, and D. C. Sorensen. Block reduction of matrices to condensed forms for eigenvalue computations. LAPACK Working Note No.2. Technical Memorandum 99, Mathematics and Computer Science Division, Argonne National Laboratory, Argonne, Illinois 60439, USA, 1987. <http://www.netlib.org/lapack/lawns/downloads/>.
- [3] J. Demmel, J. Du Croz, S. Hammarling, and D. C. Sorensen. Guidelines for the design of symmetric eigenroutines, SVD, and iterative refinement and condition estimation for linear systems. LAPACK Working Note No.4. Technical Memorandum 111, Mathematics and Computer Science Division, Argonne National Laboratory, Argonne, Illinois 60439, USA, 1988. <http://www.netlib.org/lapack/lawns/downloads/>.
- [4] C. H. Bischof, J. Demmel, J. J. Dongarra, J. Du Croz, A. Greenbaum, S. Hammarling, and D. C. Sorensen. Provisional contents. LAPACK Working Note No.5. Technical Report ANL-88-38, Mathematics and Computer Science Division, Argonne National Laboratory, Argonne, Illinois 60439, USA, 1988. <http://www.netlib.org/lapack/lawns/downloads/>.
- [5] E. Anderson, Z. Bai, C. H. Bischof, J. Demmel, J. J. Dongarra, J. Du Croz, A. Greenbaum, S. Hammarling, A. McKenney, and D. C. Sorensen. LAPACK: A portable linear algebra library for high-performance computers. LAPACK Working Note No.20. Technical Report CS-90-105, Department of Computer Science, University of Tennessee, 107 Ayres Hall, Knoxville, TN 37996-1301, USA, 1990. <http://www.netlib.org/lapack/lawns/downloads/>.
- [6] J. J. Dongarra, S. Hammarling, and J. H. Wilkinson. Numerical considerations in computing invariant subspaces. LAPACK Working Note No.25. Technical Report CS-90-117, Department of Computer Science, University of Tennessee, 107 Ayres Hall, Knoxville, TN 37996-1301, USA, 1990. <http://www.netlib.org/lapack/lawns/downloads/>.
- [7] E. Anderson, C. H. Bischof, J. Demmel, J. J. Dongarra, J. Du Croz, S. Hammarling, and W. Kahan. Prospectus for an extension to LAPACK: A portable linear algebra library for high-performance computers. LAPACK Working Note No.26. Technical Report CS-90-118, Department of Computer Science, University of Tennessee, 107 Ayres Hall, Knoxville, TN 37996-1301, USA, 1990. <http://www.netlib.org/lapack/lawns/downloads/>.
- [8] J. J. Dongarra, J. Du Croz, S. Hammarling, J. Waśniewski, and A. Zemla. A proposal for a Fortran 90 interface for LAPACK. LAPACK Working Note

- No.101. Technical Report CS-95-301, Department of Computer Science, University of Tennessee, 107 Ayres Hall, Knoxville, TN 37996-1301, USA, 1995. <http://www.netlib.org/lapack/lawns/downloads/>.
- [9] J. J. Dongarra, S. Hammarling, and S. Ostrouchov. BLAS technical workshop. LAPACK Working Note No.109. Technical Report CS-95-317, Department of Computer Science, University of Tennessee, 107 Ayres Hall, Knoxville, TN 37996-1301, USA, 1995. <http://www.netlib.org/lapack/lawns/downloads/>.
- [10] J. J. Dongarra, S. Hammarling, and D. W. Walker. Key concepts for parallel out-of-core *LU* factorization. LAPACK Working Note No.110. Technical Report CS-96-324, Department of Computer Science, University of Tennessee, 107 Ayres Hall, Knoxville, TN 37996-1301, USA, 1996. <http://www.netlib.org/lapack/lawns/downloads/>.
- [11] L. S. Blackford, A. Cleary, J. Demmel, I. Dhillon, J. J. Dongarra, S. Hammarling, A. Petit, H. Ren, K. Stanley, and R. C. Whaley. Practical experience in the dangers of heterogeneous computing. LAPACK Working Note No.112. Technical Report CS-96-330, Department of Computer Science, University of Tennessee, 107 Ayres Hall, Knoxville, TN 37996-1301, USA, 1996. <http://www.netlib.org/lapack/lawns/downloads/>.
- [12] L. S. Blackford, J. J. Dongarra, J. Du Croz, S. Hammarling, and J. Waśniewski. A Fortran 90 interface for LAPACK: LAPACK90, version 1.0. LAPACK Working Note No.117. Technical Report CS-96-341, Department of Computer Science, University of Tennessee, 107 Ayres Hall, Knoxville, TN 37996-1301, USA, 1996. <http://www.netlib.org/lapack/lawns/downloads/>.
- [13] G. W. Howell, J. W. Demmel, C. T. Fulton, S. Hammarling, and K. Marmol. Cache efficient bidiagonalization using BLAS 2.5 operators. LAPACK Working Note 174, Netlib, <http://www.netlib.org/lapack/lawns/downloads/>, 2005.

UNPUBLISHED TECHNICAL REPORTS

- [1] S. Hammarling and J. H. Wilkinson. The practical behaviour of linear iterative methods with particular reference to S.O.R. Technical Report NAC 69, National Physical Laboratory, Teddington, Middlesex TW11 0LW, UK, 1976.
- [2] S. Hammarling. A survey of numerical aspects of plane rotations. Report Maths. 1, School of Mathematics and Statistics, Middlesex University, Bounds Green Road, London N11 2NQ, UK, 1977. (Available from the author – sven@nag.co.uk).
- [3] S. Hammarling, P. D. Kenward, and H. J. Symm. Complex arithmetic in FORTRAN. Technical Report NACS 23/79, National Physical Laboratory, Teddington, Middlesex TW11 0LW, UK, 1979.
- [4] M. G. Cox and S. Hammarling. Evaluation of the language Ada for use in numerical computations. Technical Report DNACS 30/80, National Physical Laboratory, Teddington, Middlesex TW11 0LW, UK, 1980. (Commissioned by the Dept. of Trade and Industry).

- [5] S. Hammarling and J. H. Wilkinson. On linear systems arising from finite difference approximations to elliptic differential equations. Technical Report DNACS 34/80, National Physical Laboratory, Teddington, Middlesex TW11 0LW, UK, 1980.
- [6] S. Hammarling, P. D. Kenward, and H. J. Symm. Amendments to Handbook for Automatic Computation, Volume II. Technical Report DNACS 41/81, National Physical Laboratory, Teddington, Middlesex TW11 0LW, UK, 1981.
- [7] S. Hammarling. Some notes on the use of orthogonal similarity transformations in control. Technical Report DITC 8/82, National Physical Laboratory, Teddington, Middlesex TW11 0LW, UK, 1982. (Also produced as a Technical Report of the University of Linköping).
- [8] S. Hammarling. Newton's method for solving the algebraic Riccati equation. Technical Report DITC 12/82, National Physical Laboratory, Teddington, Middlesex TW11 0LW, UK, 1982.
- [9] D. H. Ferriss, S. Hammarling, D. W. Martin, and A. G. P. Warham. Numerical solution of equations describing electromagnetic propagation in dielectric tube waveguides. Technical Report DITC 16/83, National Physical Laboratory, Teddington, Middlesex TW11 0LW, UK, 1983.
- [10] M. A. Singer and S. Hammarling. The algebraic Riccati equation: A summary review of some available results. Technical Report DITC 23/83, National Physical Laboratory, Teddington, Middlesex TW11 0LW, UK, 1983.
- [11] S. Hammarling, E. M. R. Long, and D. W. Martin. A generalized linear least squares algorithm for correlated observations, with special reference to degenerate data. Technical Report DITC 33/83, National Physical Laboratory, Teddington, Middlesex TW11 0LW, UK, 1983.
- [12] J. J. Dongarra, J. Du Croz, S. Hammarling, and R. J. Hanson. A proposal for an extended set of Fortran Basic Linear Algebra Subprograms. Technical Report TR3/86, The Numerical Algorithms Group Ltd, Wilkinson House, Jordan Hill Road, Oxford OX2 8DR, UK., 1986. (Also produced as Argonne National Laboratory Technical Memorandum No. 41).
- [13] K. V. Fernando and S. Hammarling. Kogbetliantz methods for parallel SVD computation: Architecture, algorithms and convergence. Technical Report TR9/86, The Numerical Algorithms Group Ltd, Wilkinson House, Jordan Hill Road, Oxford OX2 8DR, UK., 1986.
- [14] K. V. Fernando and S. Hammarling. A generalised singular value decomposition for a product of two matrices and balanced realisation. Technical Report TR10/86, The Numerical Algorithms Group Ltd, Wilkinson House, Jordan Hill Road, Oxford OX2 8DR, UK., 1986.
- [15] P. E. Gill, S. Hammarling, W. Murray, M. A. Saunders, and M. H. Wright. User's guide for LSSOL: A Fortran package for constrained linear least-squares and convex quadratic programming. Technical Report SOL 86-1, Systems Optimization Laboratory, Department of Operations Research, Stanford University, Stanford, California 94305, USA, 1986.
- [16] J. J. Dongarra, J. Du Croz, I. S. Duff, and S. Hammarling. A proposal for a set of Level 3 Fortran Basic Linear Algebra Subprograms. Technical Report TR12/87, The Numerical Algorithms Group Ltd, Wilkinson House, Jordan Hill Road, Oxford OX2 8DR, UK., 1987. (Also produced as Argonne National Laboratory Technical Memorandum No. 88).

- [17] K. V. Fernando and S. Hammarling. Unified mesh-connected architecture for eigenvalue, singular value and QR -decompositions. Technical Report TR2/88, The Numerical Algorithms Group Ltd, Wilkinson House, Jordan Hill Road, Oxford OX2 8DR, UK., 1988.
- [18] K. V. Fernando and S. Hammarling. Numerical algorithms for real-time signal processing. Contractor's Report NP1965, The Numerical Algorithms Group Ltd, Wilkinson House, Jordan Hill Road, Oxford OX2 8DR, UK., 1989.
- [19] J. Du Croz and S. Hammarling. Parallelism and the NAG Library. Technical Report TR5/90, The Numerical Algorithms Group Ltd, Wilkinson House, Jordan Hill Road, Oxford OX2 8DR, UK., 1990.
- [20] S. Hammarling. Modern software for numerical linear algebra. Technical Report LA Seminar, University of Library and Information Science, 1-2 Kasuga, Tsukuba, Ibaraki-shi, 305-8550 Japan, 2000. Part of a collection edited by H. Hasegawa (U. of Library and Information Science) and S-L. Zhang (U. of Tokyo), available on CD.