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[1] S. Balay, B. Gropp, L. C. McInnes, and B. Smith. A microkernel design for component-based parallel numerical software systems. Preprint ANL/MCS-P727-0998, Argonne National Laboratory, 1998.

Bell Labs

URL: *http://netlib.bell-labs.com/cm/cs/doc/nam.html*

[1] J. I. Aliaga, D. L.Boley, R. W. Freund, and V. Hernandez. A Lanczos-type method for multiple starting vectors. Technical Report 98/3-05, Bell Labs, 1998.

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[1] A. C. Faul and M. J. D. Powell. Proof of convergence of an iterative technique for thin plate spline interpolation in two dimensions. Technical Report NA1998/08, University of Cambridge, 1998.

[2] C. J. Budd and A. Iserles. Geometric integration: Numerical solution of differential equations on manifolds. Technical Report NA1998/10, University of Cambridge, 1998.

[3] P. C. Moan. Efficient approximation of Sturm-Liouville problems using Lie-group methods. Technical Report NA1998/11, University of Cambridge, 1998.

[4] S. Faltinsen. Backward error analysis for Lie-group methods. Technical Report NA1998/12, University of Cambridge, 1998.

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[1] Zoran Budimlic and Ken Kennedy. Static interprocedural optimizations in Java. Technical Report CRPC-TR98746, Center for Research on Parallel Computation, August 1998.

*Reports can be obtained by writing to the person or address given for the publishing institution. We recommend requesting reports by author, title, and number, since the information listed in this column has been transcribed at least once from the original sources. URLs included in the contact's address point to reports that are available online. SIGNUM Newsletter Institutional Reports columns and their BibTeX bibliographies are available online at *http://www.netlib.org/signum-reports/*

[2] Chao Yang. Convergence analysis of an inexact truncated RQ-iteration. Technical Report CRPC-TR98747-S, Center for Research on Parallel Computation, April 1998.

[3] Chao Yang. Accelerating the Arnoldi iteration - theory and practice. Technical Report CRPC-TR98748-S, Center for Research on Parallel Computation, April 1998.

[4] Francoise Tisseur and Jack Dongarra. Parallelizing the divide and conquer algorithm for the symmetric tridiagonal eigenvalue problem on distributed memory architectures. Technical Report CRPC-TR98749, Center for Research on Parallel Computation, February 1998.

[5] Jerzy Wasniewski and Jack Dongarra. High performance linear algebra package - LAPACK90. Technical Report CRPC-TR98750, Center for Research on Parallel Computation, March 1998.

[6] R. Clint Whaley and Jack Dongarra. Automatically tuned linear algebra software. Technical Report CRPC-TR98751, Center for Research on Parallel Computation, December 1997.

[7] E. F. D'Azevedo and Jack Dongarra. Packed storage extensions for ScaLAPACK. Technical Report CRPC-TR98752, Center for Research on Parallel Computation, April 1998.

[8] Susan Blackford and R. Clint Whaley. ScaLAPACK evaluation and performance at the DoD MSRCs. Technical Report CRPC-TR98753, Center for Research on Parallel Computation, April 1998.

[9] Pamela J. Williams, Amr S. El-Bakry, and Richard A. Tapia. Optimal face identification methods and bounded variable linear programs. Technical Report CRPC-TR98755-S, Center for Research on Parallel Computation, August 1998.

[10] Pamela Joy Williams. Effective finite termination procedures in interior-point methods for linear programming. Technical Report CRPC-TR98756-S, Center for Research on Parallel Computation, April 1998.

[11] Petr Kloucek and Frank R. Toffoletto. Three dimensional finite element modeling of the earth's magnetosphere. Technical Report CRPC-TR98757, Center for Research on Parallel Computation, May 1998.

[12] Matthias Heinkenschloss and Luis N. Vicente. An interface between optimization and application for the numerical solution of optimal control problems. Technical Report CRPC-TR98760, Center for Research on Parallel Computation, April 1998.

[13] Amr El-Bakry and Trond Steihaug. On the component-wise convergence rate. Technical Report CRPC-TR98761, Center for Research on Parallel Computation, August 1998.

[14] Ali Bouaricha, Jorge J. More, and Zhijun Wu. Preconditioning Newton's method. Technical Report CRPC-TR98762, Center for Research on Parallel Computation, May 1998.

[15] Michael C. Ferris, Michael P. Mesnier, and Jorge J. More. NEOS and CONDOR: Solving optimization problems over the internet. Technical Report CRPC-TR98763-S, Center for Research on Parallel Computation, March 1998.

[16] Sharon Ann Lozano. Stability and error analysis of the finite element models of the 1-D shallow water equations. Technical Report CRPC-TR98769-S, Center for Research on Parallel Computation, September 1998.

[17] Cristina Villalobos, Richard Tapia, and Yin Zhang. The behavior of Newton-type methods on two equivalent systems from linear programming. Technical Report CRPC-TR98770-S, Center for Research on Parallel Computation, September 1998.

[18] Marielba Rojas. A large-scale trust-region approach to the regularization of discrete ill-posed problems. Technical Report CRPC-TR98773-S, Center for Research on Parallel Computation, September 1998.

[19] D.C. Sorensen. Truncated QZ methods for large scale generalized eigenvalue problems. Technical Report CRPC-TR98774, Center for Research on Parallel Computation, January 1998.

[20] D.C. Sorensen. Deflation for implicitly restarted Arnoldi methods. Technical Report CRPC-TR98775, Center for Research on Parallel Computation, May 1998.

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[1] Robert Michael Lewis, Anthony T. Patera, and Jaume Peraire. A posteriori finite element bounds for sensitivity derivatives of partial-differential-equation outputs. Technical Report NASA/CR-1998-208469 ICASE Report No. 98-36, Institute for Computer Applications in Science and Engineering, August 1998.

[2] Ignacio M. Llorente and N. Duane Melson. Robust multigrid smoothers for three dimensional elliptic equations with strong anisotropies. Technical Report NASA/CR-1998-208700 ICASE Report No. 98-37, Institute for Computer Applications in Science and Engineering, August 1998.

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[1] Jesse L. Barlow. More accurate bidiagonal reduction for computing the singular value decomposition. Numerical Analysis Report No. 331, University of Manchester (UMIST), August 1998.

[2] Françoise Tisseur. Backward error and condition of polynomial eigenvalue problems. Numerical Analysis Report No. 332, University of Manchester (UMIST), August 1998.

[3] Nicholas J. Higham. Notes on accuracy and stability of algorithms in numerical linear algebra. Numerical Analysis Report No. 333, University of Manchester (UMIST), August 1998.

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[1] K. Sinha and G. V. Candler. Convergence improvement of two-equation turbulence model calculations. Research Report UMSI 98/129, University of Minnesota Supercomputing Institute, July 1998.

[2] J. B. Rosen, H. Park, J. Glick, and L. Zhang. Accurate solution to overdetermined linear equations with errors using L1 norm minimization. Research Report UMSI 98/161, University of Minnesota Supercomputing Institute, September 1998.

[3] J. B. Rosen, H. Park, and J. Glick. Signal identification using a least L1 norm algorithm. Research Report UMSI 98/162, University of Minnesota Supercomputing Institute, September 1998.

[4] V. F. de Almeida, A. M. Chapman, and J. J. Derby. On equilibration and sparse factorization of matrices arising in finite element solutions of partial differential equations. Research Report UMSI 98/165, University of Minnesota Supercomputing Institute, September 1998.

[5] I. V. Sytine, D. H. Porter, P. R. Woodward, S. W. Hodson, and K. H. Winkler. Convergence tests for piecewise parabolic method and Navier-Stokes solutions for homogeneous compressible turbulence. Research Report UMSI 98/169, University of Minnesota Supercomputing Institute, October 1998.

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[1] A. M. Stuart and J. O. Warren. Analysis and experiments for a computational model of a heat bath. Technical Report NA-98/10, Oxford, 1998.

[2] Franco Brezzi, Donatella Marini, and Endre Suli. Residual-free bubbles for advection-diffusion problems: the general error analysis. Technical Report NA-98/11, Oxford, 1998.

[3] L. N. Trefethen. Predictions for scientific computing fifty years from now. Technical Report NA-98/12, Oxford, 1998.

[4] J. S. Plank, H. Casanova, M. Beck, and J. Dongarra. Deploying fault tolerance and task migration with NetSolve. Technical Report NA-98/13, Oxford, 1998.

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[1] R. W. Numrich and J. K. Reid. Co-array Fortran for parallel programming. Technical Report RAL-TR-1998-060, Rutherford Appleton Laboratory, 1998.

[2] N. I. M. Gould. Iterative methods for ill-conditioned linear systems from optimization. Technical Report RAL-TR-1998-064, Rutherford Appleton Laboratory, 1998.

[3] N. I. M. Gould, M. E. Hribar, and J. Nocedal. On the solution of equality constrained quadratic programming problems arising in optimization. Technical Report RAL-TR-1998-069, Rutherford Appleton Laboratory, 1998.

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[1] D. Calvetti, G.H. Golub, and L. Reichel. A computable error bound for matrix functionals. Technical Report SCCM-98-18, Stanford University, 1998.

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[1] A. Ramage. A multigrid preconditioner for stabilised discretisations of advection-diffusion problems. Technical Report 1998/33, University of Strathclyde, 1998.

[2] J. A. Mackenzie and M. L. Robertson. The numerical solution of one-dimensional phase change problems using an adaptive moving mesh method. Technical Report 1998/34, University of Strathclyde, 1998.

[3] D. J. Higham. Mean-square and asymptotic stability of numerical methods for stochastic ordinary differential equations. Technical Report 1998/39, University of Strathclyde, 1998.