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CURRICULUM VITÆ

Lothar Reichel

Kent State University
Department of Mathematical Sciences
Summit Street
P.O. Box 5190
Kent, OH 44242
Phone: (330) 672-9114
Fax: (330) 672-2209
E-mail: reichel@math.kent.edu
Home page: http://www.math.kent.edu/∼reichel

Home phone: (216) 561-6046

RESEARCH INTERESTS

Numerical Analysis/Scientific Computing, and in particular:

- Ill-posed problems.
- Orthogonal polynomials and quadrature, applications in linear algebra, signal and image processing.
- Large-scale eigenvalue problems, applications to path following.
- Iterative methods for large linear systems of equations.
- Structured problems in linear algebra and applications.
- Matrix functions, applications to network analysis.

EDUCATION

Ph. D. (fil. dr.), Numerical Analysis/Computer Science, University of Stockholm, Sweden, 1982.

B. Sc. (fil. kand.), University of Lund, Sweden, 1974.

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

AMS, IEEE, ILAS, SIAM

EMPLOYMENT

Professor, Department of Mathematical Sciences, Kent State University, Kent, OH, 2001–present.

Professor, Department of Mathematics and Computer Science, Kent State University, Kent, OH, 1991–2001.

Professor, Department of Mathematics, University of Kentucky, Lexington, KY, 1991–92.

Associate Professor, Department of Mathematics, University of Kentucky, Lexington, KY, 1988–91.

Assistant Professor, Department of Mathematics, University of Kentucky, Lexington, KY, 1983–88.

Lecturer, Department of Numerical Analysis and Computer Science, Royal Institute of Technology, Stockholm, Sweden, 1982.

Assistant, Department of Numerical Analysis and Computer Science, Royal Institute of Technology, Stockholm, Sweden, 1975–81.

AWARDS

Chercheur en Mathématique, Centre National de la Recherche Scientifique, France, fall 2012.

Chair of Excellence, University Carlos III of Madrid, Madrid, Spain, 2010-2011.

Senior Research Associateship, National Research Council, 1991.

Scholarship, Swedish Institute and Mathematisches Forschungsinstitut, ETH, Zürich, 1983-84.

Scholarship, Sweden-America Foundation and Mathematics Research Center, University of Wisconsin, Madison, WI, 1982-83.

EDITORIAL WORK

Editor, Journal of Computational and Applied Mathematics, 1987–present.

Associate Editor, SIGNUM Newsletter, 1987–97.

Editor, Numerische Mathematik, 1991–present.

Editor, Advances in Computational Mathematics, 1992–present.

Editor-in-Chief for Electronic Transactions on Numerical Analysis, 1993–present.

Editor, SIAM Journal on Matrix Analysis and Applications, 1995–2007.

Editor, BIT, 1997–present.

Editor, Mathematics of Computation, 1999–2007.

Editor, Journal of Applied Mathematics, 2000–2004.

Editor, Journal of Scientific Computing, 2006–present.

Editor, Computational Methods and Function Theory, 2001–present.

Editor, Numerical Linear Algebra with Applications, 2002–present.

Editor, Numerical Algorithms, 2006–present.

Editor, Kragujevac Journal of Mathematics, 2006–present.

Editor, Advances in Numerical Analysis, 2008–present.

Editor, Open Applied Mathematics Journal, 2007–present.

Editor, Mathematics, 2013–present.

Editor, Dolomites Res. Notes Approx., 2013–present.

Editor, Applied Numerical Mathematics, 2013–present.

Editor for the book series "Numerical Methods and Algorithms" published by Springer, 2008–present.

Editor for the book series "SpringerBriefs in Mathematics" published by Springer, 2014–present.

ORGANIZATION OF CONFERENCES, WORKSHOPS, AND SPECIAL SESSIONS

Minisymposium on Matrices and Orthogonal Polynomials (16 speakers) at the 18th ILAS Meeting, June 3-7, 2013, Providence, RI (with J. Geronimo and F. Marcellán).

Conference on Structured Matrix Computations in Non Euclidean Geometries: Algorithms and Applications (about 40 speakers), Oct. 8-12, 2012, Luminy, France (with P. Benner, M. Sadkane, and A. Salam).

Special session on Approximation Methods in Numerical Linear Algebra (10 speakers) at the Third Dolomites Workshop on Constructive Approximation and Applications, Sep. 9-14, 2012, Alba di Canazei, Italy (with M. Redivo Zaglia).

Workshop on Numerical Linear Algebra (23 speakers), July 8-11, 2011, Budapest, Hungary, at the conference Foundation of Computational Mathematics (with O. Holtz).

Minisymposium on Structured Matrices (15 speakers) at the meeting of the International Linear Algebra Society, June 21–25, 2010, Pisa, Italy (with Y. Eidelman and M. Van Barel).

Conference on Inverse Problems, Computations, and Applications (about 55 speakers), May 31-June 4, 2010, Luminy, France (with K. Jbilou and H. Sadok).

Special session on Large Scale Matrix Computation (22 speakers) at the AMS Spring Southeastern Sectional Meeting, March 27-28, 2010, Lexington, KY (with Q. Ye).

Special session on Structured Matrix Computations (20 speakers), Oct. 26–29, 2009, Seaside, CA (with M. Van Barel).

Conference on Linear and Numerical Linear Algebra: Theory, Methods, and Applications, Aug. 12–14, Northern Illinois University, De Kalb, IL (with B. N. Datta et al.).

Conference on the occasion of Richard Varga's 80th birthday, Richard Varga Fest, Oct. 17–18, 2008, Kent State University, Kent, OH (with L. Dykes, P. Farrell, J. Li, A. Ruttan, and L. Smithies).

Workshop on Numerical Linear Algebra (27 speakers), June 20–22, 2008, Honk Kong, at the conference Foundation of Computational Mathematics (with O. Holtz).

Numerical Analysis in Monterey, Graggfest '06, Nov. 3–4, 2006, Naval Postgraduate School, Monterey, CA (with G. Ammar, C. Borges, and M. Van Barel).

Special session on Inverse Problems: Theory and Numerics for Novel Applications, Joint Mathematics Meetings, Jan. 13–14, 2006, San Antonio, TX (with H. Engl).

Workshop on Numerical Linear Algebra, July 7–9, 2005, Santander, Spain, at the conference Foundation of Computational Mathematics (with S. Vavasis).

Workshop on Computational Methods for Inverse Problems and Applications, Nov. 14–19, 2003, Institute for Pure and Applied Mathematics, UCLA, Los Angeles, CA (with H. Engl, D. Colton, P. Deuflhard, D. Donoho, and E. Michielssen).

Special session on Numerical Linear Algebra at the First Joint AMS-RSME International Meeting, June 18–21, 2003, Seville, Spain (with F. Marcellán).

Following the flows of Numerical Analysis: A conference on the occasion of the 10th anniversary of the Electronic Transaction on Numerical Analysis (ETNA), May 29–31, 2003, Kent State University, Kent, OH (with V. Andriyevskyy, D. Calvetti, A. Melton, A. Ruttan, and R. S. Varga).

Applied Inverse Problems: Theoretical and Computational Aspects, June 18–22, 2001, Montecatini Terme, Italy (with M. Bertero, D. Calvetti, T.F. Chan, G.H. Golub, G. Inglese, A. Murli, R.J. Plemmons, S. Seatzu, F. Sgallari, and G. Talenti).

Mathematical Journey through Analysis, Matrix Theory and Scientific Computation: A conference in Honor of Richard Varga's 70th Birthday, Mar. 25–27, 1999, Kent State University, Kent, OH (with D. Calvetti and A. Ruttan).

ODE to Linear Algebra and Rational Approximation, a Conference in Honor of William B. Gragg's 60th Birthday, Nov. 1–2, 1996, Naval Postgraduate School, Monterey, CA (with G.S. Ammar, C. Borges and D. Calvetti).

Special sessions (with 22 presentations) on Numerical Linear Algebra and Scientific Computing at AMS Meeting # 904, Nov. 3–4, 1995, Kent State University, Kent, OH (with A. Ruttan and R.S. Varga).

Numerical Linear Algebra and Scientific Computing, Mar. 13–14, 1992, Kent State University, Kent, OH (with A. Ruttan and R.S. Varga).

THESIS DIRECTION

Dan Y. Hu, Ph.D., 1992, University of Kentucky:
"Parallel Krylov subspace methods for solving Sylvester's equation."

Carl F. Jagels, Ph.D., 1992, University of Kentucky:
"Applications of Szegő polynomials in numerical analysis."

James Baglama, Ph.D., 1997, Kent State University:
"Krylov subspace methods with application to liquid crystal modeling."

Qin Zhang, Ph.D., 1998, Kent State University:
"Iterative methods for linear ill-posed problems."

James E. Blevins, M.S., 1998, Kent State University:
"Reducible linear operators that contract angles."

Bryan Lewis, Ph.D., 2000, Kent State University:
"Krylov methods for signals, systems and control."

Naman Al-Niemi, M.S., 2000, Kent State University:
"On the ordering of tridiagonal matrices in the cyclic reduction method for Poisson's equation."

Abdallah Shuibi, Ph.D., 2003, Kent State University:
"Numerical methods for large-scale ill-posed problems."

Sun-Mi Kim, Ph.D., 2004, Kent State University:
"Orthogonal polynomials, quadrature rules, and linear algebra."

Renat Islamov, M.S., 2005, Kent State University:

"Tikhonov regularization of large-scale problems."

Andriy Shyshkov, Ph.D., 2010, Kent State University:
"Numerical solution of ill-posed problems."

Arthur Neuman, M.S., 2010, Kent State University:
"Regularization methods for ill-posed problems."

Martin Fuhry, Honors thesis, 2011, Kent State University:
"A new Tikhonov regularization method."

Tristan A. Hearn, Ph.D., 2012, Kent State University:
"Numerical methods for ill-posed problems with applications."

David R. Martin, Ph.D., 2012, Kent State University:
"Quadrature approximation of matrix functions with applications."

Xuebo Yu, Ph.D., 2014, Kent State University:
"Generalized Krylov subspace methods with applications."

Tunan Tang, work for Ph.D. in progress.

Hessah Alqahtani, work for Ph.D. in progress.

PRINCIPAL ACADEMIC VISITS

Visiting Professor, Department of Computer Science, Catholic University of Leuven, Leuven, Belgium, June 2012, July 2014.

Visiting Professor, Department of Mathematics, University of Valenciennes, Valenciennes, France, May 2012, May 2014.

Visiting Professor, Department of Mathematics and Computer Science, Technical University of Eindhoven, Eindhoven, The Netherlands, July-Aug. 2009, June-July 2010, May-June 2013.

Visiting Professor, IRISA, University of Rennes, France, Aug. 2008, June 2009.

Visiting Professor, Department of Mathematics, University of Cagliari, Cagliari, Italy, June-July 2008, July 2011.

Visiting Scientist, Radon Institute of Computational and Applied Mathematics, Linz, Austria, May-June 2007, July 2012.

Visiting Professor, Department of Mathematics, Technical University of Berlin, Berlin, Germany, Feb.-Mar. 2007.

Visiting Professor, Department of Mathematics, University Carlos III, Leganés, Spain, November 2006.

Visiting Professor, Department of Mathematics, University of Bologna, Bologna, Italy, September 2006, July 2007.

Visiting Professor, Department of Mathematics, University of Lille, Villeneuve d'Asq, France, June 2005.

Visiting Professor, Department of Mathematics, University of Littoral, Calais, France, June 2004, May 2005, June 2006, May 2008, May 2009, May 2010, June 2011, July 2013, June 2014.

Visiting Professor, Department of Biomedical Engineering, Case Western Reserve University,

Cleveland, OH, Aug. 1998-July 1999.

Visiting Professor, Department of Mathematics, University of Bologna, Italy, and Department of Applied Mathematics, University of Naples, Italy, July 1994.

Visiting Professor, Department of Mathematics, University of Bologna, Italy, June-July 1993, Sep. 2006.

Visiting Scientist, CERFACS, Toulouse, France, July 1992.

Research Associate, Department of Mathematics, Naval Postgraduate School, Monterey, CA, Jan.-June 1991.

Visiting Scholar, Computer & Information Technology Institute, Rice University, Houston, TX, Sep.-Dec. 1990.

Visiting Professor, Department of Computational and Applied Mathematics, University of the Witwatersrand, Johannesburg, South Africa, July 1990.

Visiting Scientist, Department of Mathematics, Massachusetts Institute of Technology, Cambridge, MA, Mar.-Apr. 1989.

Visiting Scientist, Applied Mathematics Division, Argonne National Laboratory, Argonne, IL, June-Aug. 1986.

Visiting Assistant Professor, Department of Mathematics, University of South Florida, Tampa, FL, spring semester 1986.

Visiting Researcher, Computer Science Department, Stanford University, Stanford, CA, Aug. 1985, Aug. 1993, Jan.-July 1995.

Visiting Professor, Department of Applied Mathematics, University of Hamburg, Hamburg, Germany, Nov. 1983, Apr.–July 1986.

Research Associate, Mathematics Research Institute, Swiss Federal Institute of Technology (ETH), Zürich, Switzerland, academic year 83/84.

Research Associate, Mathematics Research Center, University of Wisconsin, Madison, WI, Aug. 1982-July 1983.

INDUSTRIAL EXPERIENCE

Senior Scientist, IBM Bergen Scientific Centre, Bergen, Norway, Aug. 1987–Aug. 1989, June 1990, July-Aug. 1991.

Worked for the Swedish Institute of Applied Mathematics, spring semester 1982.

Worked for Husqvarna AB (a Swedish company) with problems of microwave heating, 1973-75.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Mathematical Society

Institute of Electrical and Electronics Engineers

Society for Industrial and Applied Mathematics

PUBLICATIONS

Books and Special Journal Volumes Edited

1. Numerical Linear Algebra, Proceedings of the SIAM Western Pennsylvania/Eastern Ohio Sectional Meeting, March 13–14, 1992 (with A. Ruttan and R.S. Varga), de Gruyter, Berlin, 1993.
2. Special issue of J. Comput. Appl. Math. dedicated to W.B. Gragg on the occasion of his 60th birthday (with G.S. Ammar and D. Calvetti), issue 1, vol. 86, 1997.
3. Mathematical Journey through Analysis, Matrix Theory and Scientific Computation, special volume of Numerical Algorithms dedicated to R.S. Varga (with D. Calvetti), vol. 25, 2000.
4. Quadrature and Orthogonal Polynomials, special volume of J. Comput. Appl. Math. (with W. Gautschi and F. Marcellán), vol. 127, 2001. Also published as the book "Numerical Analysis 2000, vol. 5, Quadrature and Orthogonal Polynomials, Elsevier, Amsterdam, 2001.
5. Applied Computational Inverse Problems, special issue of J. Comput. Appl. Math. (with F. Sgallari), issue 2, vol. 198, 2007.
6. Special volume of Electron. Trans. Numer. Anal. dedicated to G.H. Golub (with M. Gutknecht, M. Overton, D.B. Szyld, L.N. Trefethen, P. Van Dooren, and A. Wathen), vol. 28, 2007-2008.
7. Numerical Algebra and Scientific Computing, special issue of J. Comput. Appl. Math. (with Z.-Z. Bai and Z.-C. Shi), issue 1, vol. 226, 2009.
8. Matrix Analysis and Applications (M2A), special volume of Electron. Trans. Numer. Anal. (with B. Beckermann, K. Jbilou, Y. Saad, M. Sadkane, and A. Salam), vol. 33, 2008–2009.
9. Special issue of J. Comput. Appl. Math. dedicated to W.B. Gragg on the occasion of his 70th birthday (with G.S. Ammar and M. Van Barel), issue 5, vol. 233, 2010.
10. Special volume of Electron. Trans. Numer. Anal. dedicated to Richard S. Varga on the occasion of his 80th birthday (with V. Andriyevskyy, M. Eiermann, R. Freund, J. Li, V. Mehrmann, R. Nabben, and D. Szyld), vol. 36, 2009–2010.
11. Special issue of Linear Algebra and Its Applications with selected papers presented at the Northern Illinois University LA'09 Conference on Linear and Numerical Linear Algebra: Theory, Methods, and Applications, August 12-14, 2009 (with B.N. Datta, R.J. Plemmons, and Q. Ye), issue 7, vol. 434, 2011.
12. Inverse Problems: Computation and Applications, special issue of J. Comput. Appl. Math. (with A. Bouhamidi, K. Jbilou, R. Ramlau, H. Sadok, and F. Sgallari), issue 8, vol. 236, 2012.
13. Special issue of Linear Algebra and Its Applications dedicated to Heinrich Voss on the occasion of his 65th birthday (with T. Betcke, C. Mehl, V. Mehrmann, and S. M. Rump), issue 10, vol. 436, 2012.
14. Innovative Methods and Theories in Numerical Algebra, special issue of Numer. Linear Algebra Appl. (with Z.-Z. Bai, I. S. Duff, and Z.-C. Shi), issue 6, vol. 19, 2012.
15. Inverse Problems in Science and Industry, special issue of Numerical Linear Algebra and Applications dedicated to Biswa N. Datta (with E. K.-W. Chu and W.-W. Lin), issue 2, vol. 20, 2013.
16. Special issue of Applied Numerical Methods with selected papers presented at the 10th IMACS

meetingi, held in Marrakech, Morocco, May 18-21, 2011 (with K. Jbilou and H. Sadok), vol. 75, 2014.

17. Special volume of Electron. Trans. Numer. Anal. with selected papers presented at the Conference on Numerical Analysis and Scientific Computing with Applications (NASCA 13), held in Calais, France, June 24-26, 2013 (with K. Jbilou and H. Sadok), in preparation.

Numerical Methods for Ill-Posed Problems

1. An iterative method for image reconstruction from projections (with D. Calvetti, F. Sgallari and G. Spaletta), in Proceedings of the Fifth SIAM Conference on Applied Linear Algebra, ed. J.G. Lewis, SIAM, Philadelphia, 1994, pp. 92–96.
2. Iterative solution methods for ill-posed problems (with D. Calvetti and Q. Zhang), in Advanced Signal Processing Algorithms, ed. F.T. Luk, Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE), vol. 2563, The International Society for Optical Engineering, Bellingham, WA, 1995, pp. 338–347.
3. Application of ADI iterative methods to the restoration of noisy images (with D. Calvetti), SIAM J. Matrix Anal., 17 (1996), pp. 165–186.
4. Iterative solution methods for ill-posed problems (with D. Calvetti and Q. Zhang), in 12th Annual Review on Computational and Applied Electromagnetism, ACES, 1996, pp. 638–644.
5. Iterative methods for $X - AXB = C$ (with D. Calvetti and N. Levenberg), J. Comput. Appl. Math., 86 (1997), pp. 73–101.
6. Smooth or abrupt: a comparison of regularization methods (with D. Calvetti and B. Lewis), in Advanced Signal Processing Algorithms, Architectures and Implementations VIII, ed. F.T. Luk, Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE), vol. 3461, The International Society for Optical Engineering, Bellingham, WA, 1998, pp. 286–295.
7. Iterative solution methods for large linear discrete ill-posed problems (with D. Calvetti and Q. Zhang), Applied and Computational Control, Signals and Circuits, 1 (1999), pp. 313–367.
8. Iterative exponential filtering for large discrete ill-posed problems (with D. Calvetti and Q. Zhang), Numer. Math., 83 (1999), pp. 535–556.
9. Estimation of the L-curve via Lanczos bidiagonalization (with D. Calvetti and G.H. Golub), BIT, 39 (1999), pp. 603–619.
10. A regularizing Lanczos iteration method for underdetermined linear systems (with D. Calvetti, F. Sgallari and G. Spaletta), J. Comput. Appl. Math., 115 (2000), pp. 101–120.
11. Tikhonov regularization and the L-curve for large, discrete ill-posed problems (with D. Calvetti, S. Morigi and F. Sgallari), J. Comput. Appl. Math., 123 (2000), pp. 423–446.
12. An L-ribbon for large underdetermined linear discrete ill-posed problems (with D. Calvetti, S. Morigi and F. Sgallari), Numer. Algorithms, 25 (2000), pp. 89–107.
13. Restoration of images with spatially variant blur by the GMRES method (with D. Calvetti and B. Lewis), in Advanced Signal Processing Algorithms, Architectures, and Implementations X, ed. F.T. Luk, Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE), vol. 4116, The International Society for Optical Engineering, Bellingham, WA, 2000,

pp. 364–374.

14. An L-curve for the MINRES method (with D. Calvetti and B. Lewis), in Advanced Signal Processing Algorithms, Architectures, and Implementations X, ed. F.T. Luk, Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE), vol. 4116, The International Society for Optical Engineering, Bellingham, WA, 2000, pp. 385–395.
15. On the choice of subspace for iterative methods for linear discrete ill-posed problems (with D. Calvetti and B. Lewis), Int. J. Appl. Math. Comput. Sci., 11 (2001), pp. 1069–1092.
16. Krylov subspace iterative methods for nonsymmetric discrete ill-posed problems in image restoration (with D. Calvetti and B. Lewis), in Advanced Signal Processing Algorithms, Architectures, and Implementations XI, ed. F.T. Luk, Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE), vol. 4474, The International Society for Optical Engineering, Bellingham, WA, 2001, pp. 224–233.
17. GMRES, L-curves, and discrete ill-posed problems (with D. Calvetti and B. Lewis), BIT, 42 (2002), pp. 44–65.
18. On the regularizing properties of the GMRES method (with D. Calvetti and B. Lewis), Numer. Math., 91 (2002), pp. 605–625.
19. L-curve curvature bounds via Lanczos bidiagonalization (with D. Calvetti and P.C. Hansen), Electron. Trans. Numer. Anal., 14 (2002), pp. 20–35.
20. Lanczos-based exponential filtering for discrete ill-posed problems (with D. Calvetti), Numer. Algorithms, 29 (2002), pp. 45–65.
21. A hybrid GMRES and TV-norm based method for image restoration (with D. Calvetti and B. Lewis), in Advanced Signal Processing Algorithms, Architectures, and Implementations XII, ed. F.T. Luk, Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE), vol. 4791, The International Society for Optical Engineering, Bellingham, WA, 2002, pp. 192–200.
22. Enriched Krylov subspace methods for ill-posed problems (with D. Calvetti and A. Shuibi), Linear Algebra Appl., 362 (2003), pp. 257–273.
23. Tikhonov regularization of large linear problems (with D. Calvetti), BIT, 43 (2003), pp. 263–283.
24. Parallel deconvolution methods for three dimensional image restoration (with B. Lewis), in Advanced Signal Processing Algorithms, Architectures, and Implementations XIII, ed. F.T. Luk, Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE), vol. 5205, The International Society for Optical Engineering, Bellingham, WA, 2003, pp. 291–296.
25. L-curve and curvature bounds for Tikhonov regularization (with D. Calvetti and A. Shuibi), Numer. Algorithms, 35 (2004), pp. 301–314.
26. Tikhonov regularization with a solution constraint (with D. Calvetti), SIAM J. Sci. Comput., 26 (2004), pp. 224–239.
27. Nonnegativity and iterative methods for ill-posed problems (with D. Calvetti, G. Landi and F. Sgallari), Inverse Problems, 20 (2004), pp. 1747–1758.
28. Tikhonov regularization with nonnegativity constraint (with D. Calvetti, B. Lewis and F.

Sgallari), Electron. Trans. Numer. Anal., 18 (2004), pp. 153–173.

29. Tikhonov regularization of large symmetric problems (with D. Calvetti and A. Shuibi), Numer. Linear Algebra Appl., 12 (2005), pp. 127–139.
30. Invertible smoothing preconditioners for linear discrete ill-posed problems (with D. Calvetti and A. Shuibi), Appl. Numer. Math., 54 (2005), pp. 135–149.
31. Iterative methods for ill-posed problems and semiconvergent sequences (with S. Morigi, F. Sgallari, and F. Zama), J. Comput. Appl. Math., 193 (2006), pp. 157–167.
32. An iterative Lavrentiev regularization method (with S. Morigi and F. Sgallari), BIT, 46 (2006), pp. 589–606.
33. A truncated projected SVD method for linear discrete ill-posed problems (with S. Morigi and F. Sgallari), Numer. Algorithms, 43 (2006), pp. 197–213.
34. Decomposition methods for large linear discrete ill-posed problems (with J. Baglama), J. Comput. Appl. Math., 198 (2007), pp. 332–343.
35. An iterative method for linear discrete ill-posed problems with box constraints (with S. Morigi, F. Sgallari, and F. Zama), J. Comput. Appl. Math., 198 (2007), pp. 505–520.
36. Orthogonal projection regularization operators (with S. Morigi and F. Sgallari), Numer. Algorithms, 44 (2007), pp. 99–114.
37. Greedy Tikhonov regularization for large linear ill-posed problems (with H. Sadok and A. Shyshkov), Int. J. Comput. Math., 84 (2007), pp. 1151–1166.
38. A new L-Curve for ill-posed problems (with H. Sadok), J. Comput. Appl. Math., 219 (2008), pp. 493–508.
39. A new zero-finder for Tikhonov regularization (with A. Shyshkov), BIT, 48 (2008), pp. 627–643.
40. Cascadic multiresolution methods for image deblurring (with S. Morigi, F. Sgallari, and A. Shyshkov), SIAM J. Imaging Sci., 1 (2008), pp. 51–74.
41. Arnoldi-Tikhonov regularization methods (with B. Lewis), J. Comput. Appl. Math., 226 (2009), pp. 92–102.
42. Vector extrapolation enhanced TSVD for linear discrete ill-posed problems (with K. Jbilou and H. Sadok), Numer. Algorithms, 51 (2009), pp. 195–208.
43. Error estimates for large-scale ill-posed problems (with G. Rodriguez and S. Seatzu), Numer. Algorithms, 51 (2009), pp. 341–361.
44. Simple square smoothing regularization operators (with Q. Ye), Electron. Trans. Numer. Anal., 33 (2009), pp. 63–83.
45. An edge-preserving multilevel method for deblurring, denoising, and segmentation (with S. Morigi and F. Sgallari), in Scale Space and Variational Methods in Computer Vision, eds. X.-C. Tai, K. Morken, M. Lysaker, and K.-A. Lie, Lecture Notes in Computer Science, vol. 5567, Springer, Berlin, 2009, pp. 427–438.
46. An interior-point method for large constrained discrete ill-posed problems (with S. Morigi and F. Sgallari), J. Comput. Appl. Math., 233 (2010), pp. 1288–1297.
47. Cascadic multilevel methods for ill-posed problems (with A. Shyshkov), J. Comput. Appl.

Math., 233 (2010), pp. 1314–1325.

48. Noise-reducing cascadic multilevel methods for linear discrete ill-posed problems (with S. Morigi and F. Sgallari), Numer. Algorithms, 53 (2010), pp. 1–22.
49. Cascadic multilevel methods for fast nonsymmetric blur- and noise-removal (with S. Morigi and F. Sgallari), Appl. Numer. Math., 60 (2010), pp. 378–396.
50. An iterative method for Tikhonov regularization with a general linear regularization operator (with M. E. Hochstenbach), J. Integral Equations Appl., 22 (2010), pp. 463–480.
51. Subspace-restricted singular value decompositions for linear discrete ill-posed problems (with M. E. Hochstenbach), J. Comput. Appl. Math., 235 (2010), pp. 1053–1064.
52. An extrapolated TSVD method for linear discrete ill-posed problems with Kronecker structure (with A. Bouhamidi, K. Jbilou, and H. Sadok), Linear Algebra Appl., 434 (2011), pp. 1677–1688.
53. A hybrid multilevel-active set method for large box-constrained linear discrete ill-posed problems (with S. Morigi, R. Plemmons, and F. Sgallari), Calcolo, 48 (2011), pp. 89–105.
54. Fractional Tikhonov regularization for linear discrete ill-posed problems (with M. E. Hochstenbach), BIT, 51 (2011), pp. 197–215.
55. Wavelet-based multilevel methods for linear ill-posed problems (with E. Klann and R. Ramlau), BIT, 51 (2011), pp. 669–694.
56. Alternating Krylov subspace image restoration methods (with J. O. Abad, S. Morigi, and F. Sgallari), J. Comput. Appl. Math., 236 (2012), pp. 2049–2062.
57. A generalized global Arnoldi method for ill-posed matrix equations (with A. Bouhamidi, K. Jbilou, and H. Sadok), J. Comput. Appl. Math., 236 (2012), pp. 2078–2089.
58. Combining approximate solutions for linear discrete ill-posed problems (with M. E. Hochstenbach), J. Comput. Appl. Math., 236 (2012), pp. 2179–2185.
59. A new Tikhonov regularization method (with M. Fuhry), Numer. Algorithms, 59 (2012), pp. 433–445.
60. Large-scale Tikhonov regularization via reduction by orthogonal projection (with J. Lampe and H. Voss), Linear Algebra Appl., 436 (2012), pp. 2845–2865.
61. Discrete ill-posed least-squares problems with a solution norm constraint (with M. E. Hochstenbach and N. McNinch), Linear Algebra Appl., 436 (2012), pp. 3801–3818.
62. Implementations of range restricted iterative methods for linear discrete ill-posed problems (with A. Neuman and H. Sadok), Linear Algebra Appl., 436 (2012), pp. 3974–3990.
63. Tikhonov regularization based on generalized Krylov subspace methods (with F. Sgallari and Q. Ye), Appl. Numer. Math., 62 (2012). pp. 1215–1228.
64. Inverse problems for regularization matrices (with S. Noschese), Numer. Algorithms, 60 (2012), pp. 531–544.
65. On the reduction of Tikhonov minimization problems and the construction of regularization matrices (with L. Dykes), Numer. Algorithms, 60 (2012), pp. 683–696.
66. Square regularization matrices for large linear discrete ill-posed problems (with M. Donatelli and A. Neuman), Numer. Linear Algebra Appl., 19 (2012), pp. 896–913.

67. Iterative methods of Richardson-Lucy-type for image deblurring (with M. K. Khan, S. Morigi, and F. Sgallari), Numer. Math. Theor. Meth. Appl., 6 (2013), pp. 262–275.
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69. A cascadic alternating Krylov subspace image restoration method (with S. Morigi and F. Sgallari), Scale Space and Variational Methods in Computer Vision 2013, ed. A. Kuijper et al., Lecture Notes in Computer Science, vol. 7893, Springer, Berlin, 2013, pp. 98–108.
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