DANIELA CALVETTI – Curriculum Vitae

September 2014

Name:	Daniela Calvetti
Place of birth:	Bagnara di Romagna, Italy
Nationality:	United States and Italy

Education

Institution	Degree	Year
University of Bologna	Laurea, Mathematics	1980
University of North Carolina-Chapel Hill	MS, Mathematics	1985
University of North Carolina-Chapel Hill	PhD, Mathematics	1989

Research interests

Numerical analysis, computational inverse problems, predictive mathematical modeling, computational Bayesian inference.

Awards and recognitions

Simons Foundation Fellowship 2014-15

The James Wood Williamson Chair, 2013-present.

The John S. Diekhoff Award In Recognition of Excellence in Graduate Mentoring, Case Western Reserve University, 2013.

The Mather Spotlight Prize for Women's Scholarship, Case Western Reserve University, 2013.

The Armington Chair, Case Western Reserve University, 2011-2013

Finnish Distinguished Professorship from the Academy of Finland, 2008-2013 (declined).

Theodere M. Focke Fellow, 1996-20012, Case Western Reserve University.

Professional experience

July 2013 – June 2014	Chair , Department of Mathematics, Applied Mathematics and Statistics Case Western Reserve University
July 2008 – 2013	Chair , Department of Mathematics Case Western Reserve University
July 2001– present	Professor, Department of Mathematics, Case Western Reserve University
August 1997–2001	Associate Professor, Department of Mathematics, Case Western Reserve University
July 1996–1997	Associate Professor, Department of Mathematics, Stevens Institute of Technology
August 1990–1996	Assistant Professor, Department of Mathematics, Stevens Institute of Technology
August 1989–1990	Assistant Professor, Department of Mathematics, University of Southern Colorado
August 1988–May 1989	Visiting Assistant Professor, Department of Mathematics, North Carolina State University
January 1995–August 1995	Visiting Scholar, Department of Computer Science, Stanford University

Supervision of doctoral theses

- Charles Joseph (2014): Multiscale model and analysis of option markets. Case Western Reserve University.
- Edrissa Gassama (2014): Piezoelectric inverse problems with resonance data: a sequential Monte Carlo analysis. Case Western Reserve University.
- Andrea Arnold (2014): Sequential Monte Carlo parameter estimation for differential equations. Case Western Reserve University.
- Yougan Cheng (2014): Computational models of brain energy metabolism at different scales. Case Western Reserve University.
- Joseph Volzer (2014): An invariant embedding approach to domain decomposition. Case Western Reserve University.
- Debra McGivney (2013) : Statistical preconditioners and quantitative imaging in electrical impedance tomography. Case Western Reserve University.
- Laura Homa (2013) : Bayesian methods for source separation in magnetoencephalography. Case Western Reserve University.
- Taina Immonen (2013) : Computational models of ex vivo HIV-1 dynamics and fitness across scales. Case Western Reserve University.
- Rossana Occhipinti (2009) : In silico testing of hypotheses for brain energy metabolism with new computational models within a statistical framework. Case Western Reserve University.
- Amy Kuceyeski (2009) : Efficient computational and statistical models of hepatic metabolism. Case Western Reserve University.
- Rachael Hageman (2007) : Large scale Bayesian parameter estimation and sensitivity analysis for cardiac metabolism during ischemia. Case Western Reserve University.
- Sun-Mi Kim (2004):Orthogonal polynomials, quadrature rules, and linear algebra. Kent State University.
- Abdallah Shuibi (2003) : Numerical methods for large scale ill-posed problems. Kent State University.
- Bryan Lewis (2000) : Krylov subspace methods for signals, systems and control. Kent State University.

Supervision of Masters

- Sang Du (2012) : Data mining applications to brain energy metabolism. Case Western Reserve University.
- James Munch (2011) :Blind image deconvolution with conditionally Gaussian hypermodels. Case Western Reserve University.
- Huaizhi Chen (2009) : Estimating stochastic volatility using particle filters. Case Western Reserve University.
- Regina Reilly (1993) :Gaussian elimination with complete and partial pivoting: a hybrid scheme. Stevens Institute of Technology.

Selected professional activities

Board member of the Institutional Advisory Board of the Case Comprehensive Cancer Center, 2013- -present.

Associate editor of Frontiers in Neuroenergetics, 2012 – present.

Associate editor of Mathematics of Computations, 2008–present.

Member of the International Advisory Board of the journal Inverse Problems 1998– present. – 2004.

Associate editor of Inverse Problems and Imaging, 2005 – 2009.

Associate editor of Electronic Transactions on Numerical Analysis, 1997–2009.

Associate editor of the SIAM Journal on Matrix Analysis and Applications Analysis, 1995–2007.

Member of the program committee of Advanced Signal Processing Algorithms, Architectures, and Implementations XVII, a conference in the Annual Symposium of the Society of Photo-Optical Engineers, San Diego, CA, 2007.

Member of the program committee of Advanced Signal Processing Algorithms, Architectures, and Implementations XVII, a conference in the Annual Symposium of the Society of Photo-Optical Engineers, San Diego, CA, 2005.

Member of the organizing committee of Applied Inverse Problems: Theoretical and Computational Aspects, Cirenchester, UK, 2005.

Member of the program committee of Advanced Signal Processing Algorithms, Architectures, and Implementations XVII, a conference in the Annual Symposium of the Society of Photo-Optical Engineers, San Diego, CA, 2003.

Member of the organizing committee of ETNA: Following the flows of Numerical Analysis, Kent, OH, 2003.

Member of the organizing committee of Applied Inverse Problems 2003: Theoretical and Computational Aspects, Lake Arrowhead, CA, 2003

Member of the program committee of Advanced Signal Processing Algorithms, Architectures, and Implementations XVII, a conference in the Annual Symposium of the Society of Photo-Optical Engineers, San Diego, CA, 2001.

Member of the organizing committee of the Fourth SIAM Conference on Linear Algebra in Signals, Systems and Control, Boston, MA, 2001.

Member of the organizing committee of Applied Inverse Problems: Theoretical and Computational Aspects, Montecatini Terme, Italy, 2001.

Member of the program committee of Advanced Signal Processing Algorithms, Architectures, and Implementations XI, a conference in the Annual Symposium of the Society of Photo-Optical Engineers, San Diego, CA, 2000.

Member of the organizing committee of Mathematical Journey through Analysis, Matrix Theory and Scientific Computation, a Conference in Honor of Richard Varga's 70th Birthday, Kent, OH, 1999.

Member of the organizing committee of ODE to Linear Algebra and Rational Approximation Naval Postgraduate School, Monterey, CA, 1996.

Publications

Monographs:

1. Daniela Calvetti and Erkki Somersalo: *Computational Mathematical Modeling. An Integrated Approach through Scales.* SIAM, Philadelphia, 2012.

2. Daniela Calvetti and Erkki Somersalo: *Introduction to Bayesian Scientific Computing – Ten Lectures on Subjective Computing.* Springer Verlag, 2007.

Selected Refereed journal articles:

1. Calvetti D, Hadwin PJ, Huttunen JMJ, Isaacson D, Kaipio JP, McGivney D, Somersalo E and Volzer J: Artificial boundary condition and domain truncation in electrical impedance tomography. Part II: Computed examples. Submitted

2. Calvetti D, Hadwin PJ, Huttunen JMJ, Isaacson D, Kaipio JP, McGivney D, Somersalo E and Volzer J: Artificial boundary condition and domain truncation in electrical impedance tomography. Part I: Theory and preliminary examples. Submitted

3. Joseph C, Calvetti D and Somersalo E: Monte Carlo model of derivative markets: large traders, market manipulation and herding. Submitted.

4. Arnold A, Calvetti D, Gjedde A, Iversen P and Somersalo E: Astrocytic tracer dynamics estimated from $1-^{11}$C-acetate PET measurements. Revision submitted.

5. Cheng Y, Calvetti D and Somersalo E: Computational analysis of brain metabolism model at different scales. Under revision.

6. Calvetti D, Kaipio JP and Somersalo E: Inverse problems in the Bayesian framework. Inverse problems, to appear.

7. Calvetti D, Ernst O and Somersalo E: Dynamic updating of numerical model discrepancy using sequential sampling. Inverse problems, to appear.

8. Arnold A, Calvetti D and Somersalo E: Parameter estimation for stiff deterministic dynamical systems via ensemble Kalman filter. Inverse Problems, to appear.

9. Calvetti D and Somersalo E: Dimensional analysis and model scaling. Princeton Companion to Applied Mathematics. To appear.

10. Immonen T, Calvetti D and Somersalo E: Modeling HIV-1 dynamics and fitness in cell culture across scales, Bull. Math. Biol., **76** (2014) 486-514.

11. Calvetti D, Somersalo E and Spies R: Variable order smoothness priors for ill-posed inverse problems, Math. Comp., to appear.

12. Calvetti D and Somersalo E: Quantitative in silico analysis of neurotransmitter pathways under steady state conditions, Front. Endocrinol., 08 October 2013 ‖ doi: 10.3389

13. Arnold A, Calvetti D and Somersalo E: Linear multistep methods, particle filtering and sequential Monte Carlo. Inverse Problems 29:085007.

14. L. Homa, D. Calvetti, A. Hoover and E. Somersalo: Bayesian preconditioned CGLS for source separation in MEG time series, SIAM J. Sci. Comput. **13** (2013) B778-B798.

15. T. Immonen, R. Gibson, T.Leitner, M.A. Miller. E.J. Arts, E. Somersalo, D. Calvetti: A hybrid stochastic-deterministic computational model accurately describes spatial dynamics and virus diffusion in HIV-1 competition assay. J. Theor. Biol. **312C** (2012) 120–132.

16. E. Somersalo, R. Occhipinti, W.F. Boron and D. Calvetti: A reaction-diffusion model of CO_2 influx into an oocyte. J. Theor. Biol. **309** (2012) 185–203.

17. D. McGivney, D. Calvetti and E. Somersalo: Quantitative imaging with electrical impedance spectroscopy. Phys. Med. Biol. **57** (2012) 7289.

18. E. Somersalo, Y. Cheng and D. Calvetti: The metabolism of neurons and astrocytes through mathematical models. Ann. Biomed. Eng. **40** (2012) 2328–2344.

19. D. Calvetti, D. McGivney and E. Somersalo: Left and right preconditioning for electrical impedance tomography with structural information. Inverse Problems **28** (2012) 055015.

20. D. Calvetti and E. Somersalo: Ménage à trois: the role of neurotransmitters in the energy metabolism of astrocytes, glutamatergic, and GABAergic neurons. J. Cerebral Blood Flow and Metabolism **32** (2012) 1472–1483.
Electronic version: doi: 10.1038/jcbfm.2012.31

21. D. Calvetti and E. Somersalo: Dynamic activation model for glutamatergic neurovascular unit. J. Theor. Biol. **274** (2011) 12-29.

22. D. Calvetti, B. Wodlinger, D.M. Durand and E. Somersalo: Hierarchical beamformer and cross-talk reduction in electroneurography. J. Neural Engineering **8** (2011) 056002.

23. D. Calvetti, L. Homa and E. Somersalo: Bayesian mixture models for source separation in MEG. Inverse Problems **27** (2011) 115001.

24. J. Heino, D. Calvetti and E. Somersalo: METABOLICA: A statistical research tool for analyzing metabolic networks. Comput. Meth. Progr. Biomed. **97** (2010) 151–167.
Electronic version: Doi:10.1016/j.cmpb.2009.07.007.
Software available at `filer.case.edu/ejs49/metabolica`

25. J.M. Bardsley, D. Calvetti and E. Somersalo: Hierarchical regularization for edge-preserving reconstruction of PET images. Inverse Problems **26** (2010) 035010.
Electronic version: doi: 10.1088/0266-5611/26/3/035010

26. R. Occhipinti, E. Somersalo and D. Calvetti: Energetics of inhibition: insights with a computational model of the human GABAergic neuron-astrocyte cellular complex. J. Cerebral. Blood Flow and Metabolism **30** (2010) 1834–1846.

27. D. Calvetti, H. Hakula, S. Pursiainen and E. Somersalo: Conditionally Gaussian hypermodels for cerebral source localization. SIAM J. Imaging Sci. **2** (2009) 879–909.

28. D. Calvetti, A. Kuceyeski and E. Somersalo: Sampling-based analysis of a spatially distributed model for liver at steady state. Multiscale Model. Simulation **7** (2008) 407–431.

29. D. Calvetti, R. Hageman, R. Occhipinti and E. Somersalo: Dynamic Bayesian sensitivity analysis of myocardiac metabolism. Math. Biosci. **212** (2008) 1-21.

30. D. Calvetti and E. Somersalo: Hypermodels in the Bayesian imaging framework. Inverse Problems **24** (2008) 034013.

31. P. Hiltunen, D. Calvetti and E. Somersalo: An adaptive smoothness regularization algorithm for optical tomography. Optics Express **16** (2008) 19957-19977

32. R. Occhipinti, E. Somersalo and D. Calvetti: Astrocytes as the glucose shunt for glutamatergic neurons at high activity: an in silico study. J. Neurophysiol. **101** (2008), 2516–2527. electronic version: Doi:10.1152/jn.90377.

33. D. Calvetti and E. Somersalo: Microlocal sequential regularization in imaging. Inverse Problems and Imaging **1** (2007) 1–11.

34. R. K. Dash, E. Somersalo, M. E. Cabrera and D. Calvetti: An efficient deconvolution algorithm for estimating oxygen consumption during muscle activities. Comput. Meth. Prog. Biomed. **85** (2007) 247–256.

35. D. Calvetti, J. Heino, E. Somersalo and K. Tunyan: Bayesian stationary state flux balance analysis for a skeletal muscle metabolic model. Inverse Problems and Imaging 1 (2007), 247-263.

36. D. Calvetti and E. Somersalo: Gaussian hypermodels and recovery of blocky objects. Inverse Problems **23** (2007) 733–754.

37. R. Occhipinti, M.A. Puchowitcz, J.C. LaManna, E. Somersalo and D. Calvetti: Statistical analysis of metabolic pathways of brain metabolism at steady state. Ann. Biomed. Engineering **6** (2007) 886–902.

38. D. Bertaccini, D. Calvetti: Fast simulation of solid tumors thermal ablation treatments witha 3D reaction diffusion model, J. Comp. Biol. Med **37** (2007) 1173-1182.

39. J. Heino, K. Tunyan, D. Calvetti and E. Somersalo: Bayesian flux balance analysis applied to skeletal muscle metabolic model. J. Theor. Biol. **248** (2007) 91–110.

40. D. Calvetti: Preconditioned iterative methods for ill-conditioned linear systems from a Bayesian inversion perspective, J. Comput. Appl. Math **198** (2007) 378-395.

41. D. Calvetti, J. P. Kaipio and E. Somersalo: Aristotelian prior boundary conditions. Int. J. Math. Comp. Sci. **1** (2006) 63–81.

42. D. Calvetti, R. Dash, E. Somersalo and M. Cabrera: Local regularization method applied to estimation of oxygen consumption during muscle activities. Inverse Problems **22** (2006) 229–243.

43. D. Calvetti, F. Sgallari and E. Somersalo: Image inpainting and bootstrap priors. Image and Vision Computing **24** (2006) 782–793.

44. D. Calvetti, R. Hageman and E. Somersalo: Large-scale Bayesian parameter estimation for a three-compartment cardiac metabolism model during ischemia. Inverse Problems **22** (2006) 1797–1816.

45. D. Calvetti and E. Somersalo: Large scale statistical parameter estimation in complex systems with an application to metabolic models. Multiscale Modelling and Simulation 5 (2006) 1333-1366.

46. D. Calvetti and E. Somersalo: Priorconditioners for linear systems. Inverse Problems **21** (2005) 1397–1418.

47. D. Calvetti and E. Somersalo: Statistical compensation of boundary clutter in image deblurring. Inverse Problems **21**(2005) 1697–1714.

48. D. Calvetti, E. Somersalo: Priorconditioners for linear systems, Inverse Problems **21** (2005) 1397–1418.

49. D. Calvetti, S.-M. Kim, L. Reichel: Quadrature rules based on the Arnoldi process, SIAM J.Matrix Anal. Appl. **26** (2005) 765–781.

50. A. Chvetsov, D. Calvetti, J Sohn and T. Kinsella Regularization of inverse planning for intensity modulated radiotherapy, J. of Medical Physics **32** (2005) 501–514.

51. A .Nair, D. Calvetti, D.G. Vince: Regularized Autoregressive Analysis of Intravascular Ultra-sound Backscatter: Improvement in Spatial Accuracy of Tissue Maps, IEEE Trans. Ultrason.Ferroelectr. Freq. Control (A) **51** (2004)420–431.

52. D. Calvetti, G. Landi, L. Reichel and F. Sgallari: Nonnegativity and iterative methods for ill-posed problems, Inverse Problems **20** (2004) 1747–1758.

53. D. Calvetti, L. Reichel, A. Shuibi: Invertible smoothing preconditioners for linear discrete ill-posed problems, Appl. Numer. Math. **54** (2005) 135–149.

54. D. Calvetti, L. Reichel: Tikhonov regularization with a solution constraint, SIAM J. Sci. Comput. **26** (2004) 224-239.

55. J. Baglama, D. Calvetti, L. Reichel: IRBL: An implicitly restarted block Lanczos method for large-scale Hermitian eigenproblems, SIAM J. Sci. Comput. **24** (2003) 1650–1677.

56. D. Calvetti, L. Reichel, A. Shuibi: L-curve and curvature bounds for Tikhonov regularization, Numer. Algorithms **35** (2003)301–314.

57. D. Calvetti, L. Reichel: Pole placement preconditioning, Linear Algebra Appl. **366** (2003) 99–120.

58. D. Calvetti, L. Reichel, A. Shuibi: Enriched Krylov subspace methods for ill-posed problems, Linear Algebra Appl. **362** (2003) 257–273.

59. D. Calvetti, L. Reichel: Tikhonov regularization of large scale problems, BIT **43** (2003)263 –283.

60. D. Calvetti, L. Reichel: On the evaluation of polynomial coefficients, Numer. Algorithms **33** (2003), 153–161.

61. D. Calvetti, L. Reichel: Gauss quadrature applied to trust region computations, Numer. Algorithms **34** (2003) 85–102.

62. J. Baglama, D. Calvetti, L. Reichel: IRBL: An implicitly restarted block Lanczos method for large scale Hermitian eigenproblems, SIAM J. Sci. Comput. **24** (2003) 1650–1677.

63. J. Baglama, D. Calvetti, L. Reichel: Algorithm 827: irbleigs: A MATLAB program for computing a few eigenpairs of a large sparse Hermitian matrix, ACM Trans. Math. Software **29** (2003) 337–348.

64. D. Calvetti, L. Reichel: Symmetric Gauss-Lobatto and modified anti-Gauss rules, BIT **43** (2003) 541–554.

65. C. Ramanathan, P. Jia, R. Ghanem, D. Calvetti, Y. Rudy Noninvasive Electrocardiographic Imaging (ECGI): Application of the Generalized Minimal Residual (GMRes) method, Ann.Biomed. Eng. **3** (2003) 981–994.

66. D. Calvetti, L. Reichel: Gauss quadrature rules applied to trust region computations, Numer. Algorithms **34** (2003) 85–102.

67. D. Calvetti, B. Lewis, L. Reichel: GMRES, L-curves and discrete ill-posed problems, BIT **42** (2002), 44–65.

68. D. Calvetti, B. Lewis, L. Reichel: On the regularizing properties of the GMRES method, Numer. Math. **91** (2002) 605–625.

69. D. Calvetti, P.C. Hansen, L. Reichel: L-curve curvature bounds via Lanczos bidiagonalization, Elec. Trans. Numer. Anal. **14** (2002) 20–35.

70. D. Calvetti, L. Reichel: Lanczos-based exponential filtering for discrete ill-posed problems,Numer. Algorithms **29** (2002) 45–65.

71. D. Calvetti, S.-M. Kim, L. Reichel: The restarted QR-algorithm for eigenvalue computation of structured matrices, J. Comput. Appl. Math. **149** (2002) 415–422.

72. D. Calvetti, B. Lewis, L. Reichel: On the choice of subspace for iterative methods for linear discrete ill-posed problems, Int. J. Appl. Math. Comput. Sci. **11** (2001) 1069–1092.

73. G.S. Ammar, D. Calvetti, W.B. Gragg, L. Reichel: Polynomial zerofinders based on Szego polynomials, J. Comput. Appl. Math. **127** (2001) 1–16.

74. D. Calvetti, L. Reichel, F. Sgallari, G. Spaletta: A regularizing Lanczos iteration method for underdetermined linear systems, J. Comput. Appl. Math. **115** (2000) 101–120.

75. D. Calvetti, S. Morigi, L. Reichel, F. Sgallari: An iterative method with error estimators, J.Comput. Appl. Math. **127** (2001) 93–119.

76. D. Calvetti, B. Lewis, L. Reichel: On the solution of large Sylvester-observer equations, Numer. Linear Algebra Appl. **8** (2001) 435–451.

77. D. Calvetti, S. Morigi, L. Reichel, F. Sgallari: Tikhonov regularization and the L-curve for large, discrete ill-posed problems, J. Comput. Appl. Math. **123** (2000) 423–446.

78. D. Calvetti, L. Reichel: Iterative methods for large continuation problems, J. Comput. Appl. Math. **123** (2000) 217–240.

79. D. Calvetti, S. Morigi, L. Reichel, F. Sgallari: Computable error bounds and estimates for the conjugate gradient method, Numer. Algorithm **25** (2000) 79–88.

80. D. Calvetti, B. Lewis, L. Reichel: GMRES-type methods for inconsistent systems, Linear Algebra Appl. **316** (2000) 157–169.

81. D. Calvetti, S. Morigi, L. Reichel, F. Sgallari: An L-ribbon for large underdetermined linear discrete ill-posed problems, Numer. Algorithms **25** (2000) 89–107.

82. D. Calvetti, G.H. Golub, W.B. Gragg, L. Reichel) Computation of Gauss-Kronrod quadrature rules, Math. Comp. **69** (2000) 1035–1052.

83. D. Calvetti, L. Reichel: A block Lanczos method for large continuation problems, Numer. Algorithms **21** (1999) 109–118.

84. D. Calvetti, G.H. Golub, L. Reichel: A computable error bound for matrix functionals, J. Comput. Appl. Math. **103** (1999) 301–306.

85. D. Calvetti, G.H. Golub, L. Reichel: Estimation of the L-curve via Lanczos bidiagonalization, BIT **39** (1999) 603–619.

86. D. Calvetti, B. Lewis, L. Reichel: On the selection of poles in the single input pole placement problem, Linear Algebra Appl. **302-303** (1999) 331–345.

87. G.S. Ammar , D. Calvetti, L. Reichel: Computation of Gauss-Kronrod quadrature rules with non-positive weights, Elec. Trans.Numer. Anal. **9** (1999) 26–38.

88. D. Calvetti, L. Reichel: On an inverse eigenproblem for Jacobi matrices, Adv. Comput. Math. **11** (1999) 11–20.

89. D. Calvetti, L. Reichel, Q. Zhang: Iterative exponential filtering for large discrete ill-posedproblems, Numer. Math. **83** (1999) 535–556.

90. J. Baglama, D. Calvetti, G.H. Golub, L. Reichel: Adaptively preconditioned GMRES algorithms, SIAM J. Sci. Comput. **20** (1999) 243–269.

91. D. Calvetti, L. Reichel: A hybrid iterative method for symmetric indefinite linear systems ,J. Comput. Appl. Math. bf 92 (1998) 109–133.

92. J. Baglama, D. Calvetti, L. Reichel: Fast Leja points (with J. Baglama and L. Reichel), Elect.Trans. Numer. Anal. **7** (1998) 126–140.

93. J. Baglama, D. Calvetti, L. Reichel, A. Ruttan: Computation of a few close eigenvalues of a large matrix with application to liquid crystal modeling, J. Comput. Phys. **146** (1998) 203–226.

94. D. Calvetti, N. Levenberg, L. Reichel: Iterative methods for Xï£¡AXB = C, J. Comput. Appl. Math. **86** (1997) 73–101

95. D. Calvetti, L. Reichel: Factorizations of Cauchy matrices, J. Comput. Appl. Math. **86** (1997) 102–124.

96. G.S. Ammar, D. Calvetti, L. Reichel: Continuation methods for the computation of zeros of Szego polynomials, Linear Algebra Appl. **249** (1996) 125–155.

97. D. Calvetti, L. Reichel: An application of ADI iterative methods to restoration of noisy images, SIAM J. Matrix Anal. Appl. **17** (1996) 165–186.

98. D. Calvetti, L. Reichel: A hybrid method for symmetric positive definite linear systems,Numer. Algo. **11** (1996) 79–98.

99. D. Calvetti, L. Reichel: Adaptive Richardson iteration based on Leja points, J. Comput. Appl. Math. **71** (1996) 267–286.

100. D. Calvetti, L. Reichel: An adaptive Richardson iteration method for indefinite linear systems,Numer. Algo. **12** (1996) 125–149.

101. J. Baglama, D. Calvetti, L. Reichel: Iterative methods for computing a few eigenvalues of a large, symmetric matrix, BIT **36** (1996) 400–421.

102. D. Calvetti, L. Reichel: On the solution of Cauchy linear systems, Elec. Trans. Numer. Anal. (1996), 125–136.

103. G.S. Ammar, D. Calvetti, L. Reichel: Continuation methods for the computation of zeros of Szego polynomials, Linear Algebra Appl. **249** (1996) 125–155.

104. D. Calvetti, L. Reichel: On the solution of Cauchy systems of equations, Elec. Trans. Numer.Anal., **4** (1996) 125–136

105. D. Calvetti, E. Gallopoulos, L. Reichel: Incomplete partial fractions for parallel evaluation ofmatrix rational functions, J. Comput. Appl. Math. **59** (1995) 349–380.

106. D. Calvetti, G.H. Golub, L. Reichel: Adaptive Chebyshev iterative methods for nonsymmetric linear systems based on modified moments, Numer. Math. **67** (1994) 21–40.

107. D. Calvetti, L. Reichel, Sorensen: An implicitly restarted Lanczos algorithm for large symmetric eigenvalue problems, Electr. Trans. Numer. Anal. **2** (1994) 1–21.

108. D. Calvetti, L. Reichel: Application of a block modified Chebyshev algorithm to the iterative solution of symmetric linear systems with multiple right hand side vectors, Numer. Math. **68** (1994) 3–16.

109. D. Calvetti, L. Reichel: Fast inversion of Vandermonde-like matrices involving orthogonal polynomials, BIT **33** (1993) 473–484.

110. D. Calvetti: A stochastic roundoff error analysis for the convolution, Math. Comp. **59** (1992) 569–582.

111. D. Calvetti, L. Reichel: A Chebyshev-Vandermonde solver, Linear Algebra Appl. **172** (1992) 219–229.

112. D. Calvetti: A stochastic roundoff error analysis for the fast Fourier transform, Math. Comp. **56** (1991) 755–774.

113. D. Calvetti: Roundoff error for floating point representation of real data, Commun. in Statist.Theory and Methods **20** (1991) 2687–2696.

Book sections:

1. D. Calvetti and E. Somersalo: Statistical methods in imaging. In: O. Scherzer (Ed.): Handbook of Mathematical Methods in Imaging, 2011, Springer Verlag, 913–957.

2. D. Calvetti and E. Somersalo: Subjective Knowldege or Objective Belief? In: L. Biegler, G. Biros, O. Ghattas, M. Heinkenschloss, D. Keyes, B. Mallick, Y. Marzouk, L. Tenorio, B. van Bloemen Waanders, K. Willcox (eds) Large-scale inverse problems and quantification of uncertainty, 2010, John Wiley & Sons, Ltd, UK, 33–70.

3. R. Occhipinti, E. Somersalo and D. Calvetti: Interpretation of NMR spectroscopy human brain data with multi-compartment computational model of cerebral metabolism. In: J.C. LaManna, M.A. Puchowicz, K. Xu, D.K. Harrison, D.F. Bruley (eds.): *Oxygen Transport to Tissue XXXII*, pp.249–54.

4. D. Calvetti, L. Reichel, F. Sgallari: A modified companion matrix method based on Newton polynomials, in Fast Algorithms for Structured Matrices: Theory and Applications, ed. V.Olshevsky, Contemporary Mathematics, vol. 323, Amer. Math. Soc., Providence, RI, 2003,pp.179-186.

5. D. Calvetti, B. Lewis, L. Reichel: Partial eigenvalue assignment for large control systems,in Structured Matrices in Operator Theory, Numerical Analysis, Control, Signal and Image Processing, Contemporary Mathematics, vol. 280, Amer. Math. Soc., Providence, RI, 2001, 241–254.

6. D. Calvetti, L. Reichel, Q. Zhang: Iterative solution methods for large linear discrete ill-posed problems, in Applied and Computational Control, Signals and Systems I, ed. B.N. Datta, Applied and Computational Control, Signals and Circuit, 1999, 313–367.

7. D. Calvetti, L. Reichel: Exponential integration methods for large stiff systems of differential equations, in Iterative Methods in Scientific Computing IV, eds. D.R. Kincaid and A.C.Elster, IMACS Series in Computational and Applied Mathematics, vol. 5, IMACS, New Brunswick, 1999, 237–243.

8. D. Calvetti, L. Reichel, Q. Zhang: An adaptive semiiterative method for symmetric semidefinite linear systems, in Approximation and Computation, ed. R.V.M. Zahar, Int'l Series of Numer. Math. 115, Birkhï£¡auser, Basel, 1994, 77–96.

9. D. Calvetti, L. Reichel, Q. Zhang: Iterative solution methods for ill-posed problems, in 12th Annual Review on Computational and Applied Electromagnetism,1996, ACES, 638–644.

10. D. Calvetti, G.H. Golub, L. Reichel: Gaussian quadrature applied to adaptive Chebyshev iteration, in Iterative Methods for Sparse and Structured Problems, eds. G.H. Golub, A.Greenbaum and M. Luskin, 1993, Springer, New York, 31–44.

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