

Valeria Simoncini

Curriculum Vitae

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Employment and Education

Associate (1/11/2000-) and Full (1/11/2010-) Professor, Università di Bologna

Researcher at Istituto di Analisi Numerica (IAN) of CNR, Pavia (may 96- oct. 00)

Researcher at Istituto di Metodologie Geofisiche Ambientali (IMGA) of CNR, Modena (feb 95- jan. 96)

Visiting Scholar, CSRD, University of Illinois at Urbana-Champaign, Illinois (1991-1993)

Dottore di Ricerca (PhD) in *Matematica Computazionale ed Informatica Matematica* (sept. 1994) at the Dipartimento di Matematica Pura ed Applicata of the Università degli Studi in Padova. Title of Thesis: *Sulla risoluzione ed applicazione di sistemi lineari con più vettori noti*.

Dottore in Matematica (nov. 1989) with *laude* at the Università degli Studi in Bologna.

Teaching activity Courses periodically taught within the Math Program and Environmental Science Program (Undergraduate and Master), University of Bologna: Calculus I - Linear Algebra for beginners (8 CFU), A Basic Course in Statistics (4 CFU), Applied Multivariate Statistical Analysis (6 CFU), First Course in Numerical Analysis (9 CFU), Advanced Numerical Analysis (6 CFU).

Courses periodically taught within the PhD Program in Mathematics: “Iterative Methods for linear systems”, “Theory of Matrices”.

Lecturer at International Schools:

-Computational aspects in large scale matrix function approximations. Int’l Spring School on Matrix Functions and their applications, Laboratoire P. Painleve’, Universite’ de Lille 1,15-17 May 2013

-Recent developments in Krylov Subspace methods for Scientific Computations. At “Methods and algorithms for solving large algebraic systems on modern high performance computing systems”, School CEA-EDF-INRIA, March 30 - April 3, 2009, INRIA, Sophia-Antipolis (F).

- Projection methods for large linear systems. Summer School and Advanced Workshop on Trends and Developments in Linear Algebra, ICTP Trieste, Italy. June 22rd - July 10th 2009.

Adviser of Master and PhD theses:

Niklas Fors (Master of Science Program in Engineering Physics, Uppsala University, 2007);

Marina Popolizio (PhD, Università di Bari, 2008);

Gianluca Barbella (PhD, Politecnico di Milano, 2009);

Yiding Lin (PhD, co-adviser, Xiamen University, China, 2014);

Stephen Shank (PhD, co-adviser, Temple University, Philadelphia, USA, 2014);

Mattia Tani (PhD, Università di Bologna, spring 2015)

Davide Palitta (PhD, Università di Bologna, tentative 2017)

(Starting with 2010, the University of Bologna included “Numerical Analysis” in the PhD program in Mathematics)

Awards and Prizes

SIAM Fellow (class of 2014), Society of Industrial and Applied Mathematics, Philadelphia, USA.

Leslie Fox Prize, Finalist, Dundee 1997.

Grants awarded or short-listed

2013-2015, interdisciplinary FARB-Project “Mathematical Methods for sustainable exploration of the environment”, Università di Bologna, 25,000 Euros.

2012-2014, Indam Institute, Consortium of Math Dept in Bologna and Firenze, (annual proposal of about 6-8 people, for a total granted of about 24,000 Euros in three years).

2004-2014, Università di Bologna, around 3,000 Euros per year (top amount granted).

2007-2008 Ministry of Research and Education, Consortium-based project. Local funding: 11,400 Euros (Team Member)

2007-2008 Ministry of Research and Education, Consortium-based project (Total: 97,400 Euros). Bologna Unit, 3 people: 11,400 Euros (Team Member)

2009-2011 Ministry of Research and Education, Consortium-based project (Total: 125,579 Euros). Bologna Unit, 5 people: 36,911 Euros (Team Member)

2012, ERC Advanced Grant “Linear and generalized matrix equations: theory, algorithms and applications”, final score A (fundable). Not funded for lack of funds.

Scientific Activities and Reviews

Member of the Editorial Board for *Journal of Numerical Mathematics* (9/2014-)

Member of the Editorial Board for *ESAIM: Math. Modelling and Numerical Analysis (M2AN)* (1/2013-)

Member of the Editorial Board for *SIAM J. Numerical Analysis* (1/2012-)

Member of the Editorial Board for *ETNA - Electronic Transactions Numerical Analysis* (3/2009-9/2014)

Member of the Editorial Board for *SIAM J. Matrix Analysis and Appl.* (1/2005-)

Member of the Editorial Board for *Numerical Linear Algebra with Applications* (4/2000-)

Member of the Permanent Scientific Committee of the Householder Symposium (6/2008-)

Member of the SIAM Nominating Committee (2009-2010, one term)

Member of the ILAS Election Committee (2010, one term)

Member of Hans Schneider Prize Committee (2011, one term)

Liaison SIAGLA to SIAM Book program (responsible, 2007-2012, two terms)

Member of the Advisory Committee for the SIAM Int'l Summer School on Numerical Linear Algebra (2010-)

Member of SIAM Outstanding Paper Prizes Committee (2014-2015, two terms)

Project Evaluator for international Funding Agencies: FWO (Belgium), NSF (USA), ISF (Israel), NWO (Netherlands). External Committee Member for permanent positions and promotions at international Institutions (USA, Netherlands, Finland, etc)

Panel member for Mathematics during the VQR 2004-2010 (Ministry National evaluation process of Italian Research Quality of all Italian Universities and Research Institutes) appointment period 2011-2013.

Research Fellow of IMATI-CNR (Pavia), and of IAC-CNR, Bari

(plus a number of institutional activities in committees at various levels, at the Università di Bologna)

Organizing Activities in Conferences and Workshops (past 6 years)

Member of the Scientific Committee for the “2009 SIAM Conference on Applied Linear Algebra”, Oct. 2009, Monterey, California.

Co-organizer of the Gene Golub SIAM Summer School 2010 Int'l Summer School on Numerical Linear Algebra, Brindisi (Italy), June 7-18, 2010.

Member of the Scientific Committee for the “2011 SIAM Conference on Computational Science and Engineering”, Feb. 2011, Reno, Nevada.

Member of the Scientific Committee of the Workshop 2005 Int'l Conference on preconditioning techniques, ”Preconditioning 2011”, May 16-18 2011, Bordeaux Sud-Ouest, France

Member Member of Permanent Scientific Committee. Householder Symposium, June 12-17, 2011, Tahoe City, California.

Member of the Scientific Committee for the “2013 SIAM Conference on Computational Science and Engineering”, Feb. 2013, Boston.

Member of the Scientific Committee of the Workshop 2013 Int'l Conference on preconditioning techniques, ”Preconditioning 2013”, June 2013, Oxford, UK

Member of the Scientific Committee of ENUMATH, Lausanne, August 2013

Co-organizer, (with Michele Benzi) CIME Summer School, Exploiting Hidden Structure in Matrix Computations. Algorithms and Applications, Cetraro, June 21-26, 2015

Organizer, Workshop on Matrix Equations and Tensor Techniques”, Bologna, fall 2015.

(plus organization of a number of mini-symposia at Conferences)

Invited Plenary Talks (past 6 years)

- Aug. 2009, Int'l Conference on preconditioning techniques, ”Preconditioning 2009”, Hong Kong.
- Sept. 2009, 9th GAMM Workshop on Applied and Numerical Linear Algebra, Zurich, CH.
- Oct. 2009, Conf. of the Dutch-Flemish Numerical Analysis Communities, Zeist, Netherlands.
- July 2010 Wrksp on Nonlinear Optimization, Variational Inequalities and Equilibrium Problems, Erice (I)
- Sept. 2010, II IMA Conf. on Numerical Linear Algebra and Optimisation, Univ. of Birmingham (UK)
- Sept 2011, ENUMATH 2011, Leicester, UK.
- April 2012, MOPNET: EPSRC Matrix and Operator Pencil Network. Bath (UK).
- April 2012, Swiss Numerics Colloquium 2012, Bern (CH).
- June 2012, SIMAI 2012, Biannual Meeting, Politecnico di Torino (I).
- July 2012, SIAM Annual Meeting (AN12). Minneapolis, Minnesota (USA).

- Sept 2012, CTAC, 16th Biennial Computational Techniques and Appl. Conference, Brisbane (AU).
- Jan 2013, ATMW Numerical Linear Algebra, IIT Guwahati, Assam, India.
- Sept 2013. GAMM Workshop Applied and Numerical Linear Algebra, Bergische Universität Wuppertal, D.
- May 2015. High Performance Computing in Science and Engineering, Beskydy Mountains, Czech Republic.
- Sept 2015. XX Congress of the Italian Mathematics Union, Siena, Italy.

Monograph

A Guide to Empirical Orthogonal Functions for Climate Data Analysis, NAVARRA, ANTONIO AND SIMONCINI, V., 2010, 200 p. Springer. ISBN: 978-90-481-3701-5 March, 2010

Publications in Refereed International Journals

1. T. F. CHAN, E. GALLOPOULOS, V. SIMONCINI, T. SZETO AND C. H. TONG, *A quasi-minimal residual variant of the Bi-cgstab algorithm for nonsymmetric systems*, SIAM J. Sc. Comp. v. 15, n. 2, 1994, pp. 338-347.
2. V. SIMONCINI AND E. GALLOPOULOS, *An iterative method for nonsymmetric systems with multiple right-hand sides*, SIAM J. Sci. Comput. 16, 1995, pp. 917-933.
3. V. SIMONCINI AND E. GALLOPOULOS, *Convergence properties of block GMRES and matrix polynomials*, Linear Algebra and Appl. v. 247, n.1-3, pp. 97-120, 1996.
4. V. SIMONCINI AND M. SADKANE, *Arnoldi-Riccati method for large eigenvalue problems*, BIT v. 36 n. 3 (1996) pp. 579-594.
5. V. SIMONCINI, *Ritz and pseudo-Ritz values using matrix polynomials*, Linear Algebra and Appl. v. 241-3, pp. 787-802, 1996.
6. V. SIMONCINI AND E. GALLOPOULOS, *A hybrid block GMRES method for nonsymmetric systems with multiple right-hand sides*, J. Comp. and Applied Math., 66 (1996) pp. 457-469.
7. V. SIMONCINI, *On the numerical solution of $AX-XB=C$* , BIT v. 36 n. 4 (1996) pp. 182-198.
8. E. KASENALLY AND V. SIMONCINI, *Analysis of a minimum perturbation algorithm for nonsymmetric linear systems*, SIAM J. Num. Anal. v. 34 n. 1 (1997), pp. 48-66.
9. V. SIMONCINI, *A stabilized QMR version of block BiCG* SIAM J. Matrix Analysis and Appl. v. 18-2 (1997), pp. 419-434.
10. V. SIMONCINI AND E. SJÖSTRÖM, *An algorithm for approximating the singular triplets of complex symmetric matrices*, Numerical Linear Algebra with Applications, v.4 n.6, (1997) pp.469-489.
11. V. SIMONCINI, *A matrix analysis of Arnoldi and Lanczos methods*, Numer. Math. v. 81 n. 1 (1998) pp. 125-141.
12. V. SIMONCINI AND E. GALLOPOULOS, *Transfer function and Resolvent norm approximations of large matrices*, ETNA, v. 7 (1998), pp. 190-201.
13. V. SIMONCINI, *A new variant of restarted GMRES*, Numerical Linear Algebra with Appl., v. 6 (1999), pp. 61-77.
14. I. PERUGIA, V. SIMONCINI AND M. ARIOLI, *Linear Algebra methods in a mixed approximation of magnetostatic problems*, SIAM J. Sci. Comput., v.21, n.3, pp.1085-1101 (1999).
15. V. SIMONCINI, *Remarks on non-linear spectral perturbation*, BIT, v. 39, n.2 (1999), pp. 350-365.
16. A. FERIANI, F. PEROTTI AND V. SIMONCINI, *Iterative system solvers for the frequency analysis of linear mechanical systems*, Computer methods in Applied Mech. and Eng., v.190, n. 13-14 (2000), pp. 1719-1739.
17. I. PERUGIA AND V. SIMONCINI, *Block-diagonal and indefinite symmetric preconditioners for mixed finite element formulations*, Numerical Linear Algebra with Appl., v. 7, n.7-8 (2000), pp. 585-616.
18. V. SIMONCINI, *On the convergence of restarted Krylov subspace methods*, SIAM J. Matrix Analysis Appl., v.22, n.2, (2000), pp. 430-452.

19. V. SIMONCINI AND LARS ELDÉN, *Inexact Rayleigh quotient-type methods for eigenvalue computations*, BIT, v.42, n.1 (2002), pp. 159-182.
20. M. PENNACCHIO AND V. SIMONCINI, *Efficient algebraic solution of reaction-diffusion systems for the cardiac excitation process*, J. Comput. Applied Math., v.145 (1) (2002), pp.49-70.
21. V. SIMONCINI AND F. PEROTTI, *On the numerical solution of $(\lambda^2 A + \lambda B + C)x = b$ and application to structural dynamics*, SIAM J. Sci. Comput. v. 23 n. 6 (2002), pp. 1876-1898.
22. M. ROZLOZNIK AND V. SIMONCINI, *Krylov Subspace Methods for Saddle Point Problems with Indefinite Preconditioning*, SIAM J. Matrix Analysis and Appl., v.24 n.2 (2002) pp. 368-391.
23. V. SIMONCINI, *Algebraic formulations for the solution of the nullspace-free eigenvalue problem using the inexact Shift-and-Invert Lanczos method*, Numer. Linear Algebra w/App. v. 10, n.4 (2003), pp. 357-375.
24. V. SIMONCINI AND D. SZYLD, *Flexible Inner-Outer Krylov Subspace Methods*, SIAM J. Numerical Analysis, v.40 n. 6, (2003), pp. 2219-2239.
25. V. SIMONCINI, *Restarted Full Orthogonalization Method for shifted linear systems*, BIT Numerical Mathematics, v.43, n.2 (2003) pp. 459-466.
26. V. SIMONCINI AND D. SZYLD, *Theory of Inexact Krylov Subspace Methods and Applications to Scientific Computing*, SIAM J. Scient. Computing, v.25, n.2 (2003), pp. 454-477.
27. V. SIMONCINI AND M. PENNACCHIO, *The behavior of symmetric Krylov subspace methods for solving $Mx = (M - \gamma I)v$* , Linear Algebra and Appl., v.380 (2004), pp.53-71.
28. V. SIMONCINI, *Block triangular preconditioners for Symmetric Saddle-Point problems*, Applied Num. Math. v.49, n.1 (2004), pp. 63-80.
29. V. SIMONCINI AND M. BENZI, *Spectral Properties of the Hermitian and Skew-Hermitian Splitting Preconditioner for Saddle Point Problems*, SIAM J. Matrix Analysis and Appl., v.26, n.2 (2004), pp. 377-389.
30. V. SIMONCINI AND D. SZYLD, *On the Occurrence of Superlinear Convergence of Exact and Inexact Krylov Subspace Methods*, SIAM Review v. 47, n.2 (2005), pp. 247-272.
31. V. SIMONCINI AND DANIEL B. SZYLD, *The effect of non-optimal bases on the convergence of Krylov Subspace Methods* Numer. Math. v. 100, n.4 (2005), pp. 711-733.
32. V. SIMONCINI, *Variable accuracy of matrix-vector products in projection methods for eigencomputation*, SIAM J. Numerical Analysis v. 43, n.3 (2005), pp. 1155-1174.
33. F. BREZZI, K. LIPNIKOV AND V. SIMONCINI, *A family of mimetic finite difference methods on polygonal and polyhedral meshes*, M3AS: Mathematical Models and Methods in Applied Sciences, v.15 n.10 (2005) pp. 1533-1552.
34. GUIDING GU AND V. SIMONCINI, *Numerical solution of parameter-dependent linear systems*, J. Numer. Linear Algebra w/App. v. 12, n. 9 (2005), pp. 923-940.
35. L. LOPEZ AND V. SIMONCINI, *Analysis of projection methods for rational function approximation to the matrix exponential*, SIAM J. Numerical Analysis, v. 44, n. 2 (2006), pp. 613 - 635.
36. M. BENZI AND V. SIMONCINI, *On the Eigenvalues of a Class of Saddle Point Matrices*, Numerische Mathematik, v. 103, n.2 (2006), pp. 173-196.
37. L. LOPEZ AND V. SIMONCINI, *Preserving geometric properties of the exponential matrix by block Krylov subspace methods*, BIT, Numerical Mathematics, v. 46, n.4 (2006), pp. 813-830.

38. V. SIMONCINI AND D. B. SZYLD, *Recent developments in Krylov Subspace Methods for linear systems*, Numerical Linear Algebra w/App., v. 14, n.1 (2007), pp.1-59. (Survey)
39. V. SIMONCINI, *A new iterative method for solving large-scale Lyapunov matrix equations*, SIAM J. Scient. Computing, v.29, n.3 (2007), pp. 1268-1288.
40. FRANCO BREZZI, KONSTANTIN LIPNIKOV, MIKHAIL SHASHKOV AND V. SIMONCINI, *A new discretization methodology for diffusion problems on generalized polyhedral meshes*, Computer Methods in Applied Mechanics and Engineering, Vol. 196, Issues 37-40, 1 August 2007, pp. 3682-3692
41. A. FROMMER AND V. SIMONCINI, *Stopping criteria for rational matrix functions of Hermitian and symmetric matrices*, SIAM J. Scient. Computing, v.30, n.3 (2008), pp. 1387-1412.
42. V. SIMONCINI AND D. SZYLD, *New conditions for non-stagnation of minimal residual methods*, Numerische Mathematik, v. 109, n.3 (2008), pp. 477-487.
43. M. PENNACCHIO AND V. SIMONCINI, *Substructuring Preconditioners for Mortar Discretization of a Degenerate Evolution Problem*, Journal of Scientific Computing, v. 36, n. 3, September 2008, pp.391-419.
44. M. POPOLIZIO AND V. SIMONCINI, *Acceleration Techniques for Approximating the Matrix Exponential Operator*, SIAM J. Matrix Analysis and Appl. v.30 n.2 (2008), pp.657-683.
45. V. SIMONCINI E V. DRUSKIN, *Convergence analysis of projection methods for the numerical solution of large Lyapunov equations*, SIAM J. Numerical Analysis. Volume 47, Issue 2, pp. 828-843 (2009).
46. L. ELDÈN E V. SIMONCINI, *Solving Ill-Posed Cauchy Problems by a Krylov Subspace Method*, Inverse Problems, v.25, n.6 (June 2009).
47. MICOL PENNACCHIO AND V. SIMONCINI, *Algebraic Multigrid Preconditioners for the Bidomain Reaction-Diffusion system*, Applied Numerical Mathematics. Volume 59, Issue 12, Dec. 2009, pp. 3033-3050.
48. LEONID KNIZHNERMAN AND V. SIMONCINI, *A new investigation of the extended Krylov subspace method for matrix function evaluations*, Numerical Linear Algebra w/App. v.17, n.4, pp.615-638 (2010)
49. NICK GOULD AND V. SIMONCINI, *Spectral Analysis of saddle point matrices with indefinite leading blocks*, SIAM J. Matrix Analysis Appl., Volume 31, Issue 3, pp. 1152-1171 (2009).
50. V. SIMONCINI, *The Extended Krylov subspace for parameter dependent systems*, Applied Num. Math. v.60 n.5 (2010) 550-560.
51. V. SIMONCINI AND DANIEL B. SZYLD, *On the field of values of oblique projections*, Linear Algebra and its Applications. v.433 n.4, pp. 810-818 (2010).
52. V. SIMONCINI AND DANIEL B. SZYLD, *Interpreting IDR as a Petrov-Galerkin method*, SIAM J. Scientific Computing. v.32, n.4, pp.1898-1912 (2010).
53. V. SIMONCINI, *On a non-stagnation condition for GMRES and application to saddle point matrices*, ETNA Electr. J. Numerical Analysis, v.37, pp. 202-213 (2010).
54. MAXIM A. OLSHANSKII, AND V. SIMONCINI, *Acquired clustering properties and solution of certain saddle point systems*, SIAM. J. Matrix Anal. and Appl. Volume 31, Issue 5, pp. 2754-2768 (2010).
55. MICHELE BENZI, LUIS FERRAGUT, MICOL PENNACCHIO AND V. SIMONCINI, *Solution of Linear Systems from an Optimal Control Problem Arising in Wind Simulation*, J. Numerical Linear Algebra w/App., v. 17, n.6, pp.895-915 (2010).
56. LILIANA IRONI, LUIGI PANZERI, ERIK PLAhte AND V. SIMONCINI, *Dynamics of actively regulated gene networks*, Physica D, 240 (2011), pp.779-794.

57. DAVID J. SILVESTER , AND V. SIMONCINI, *An Optimal Iterative Solver for Symmetric Indefinite Systems stemming from Mixed Approximation*, ACM Transactions on Mathematical Software, v.37, n.4, pp.42:1–42:22, (2011).
58. LEONID KNIZHNERMAN AND V. SIMONCINI, *Convergence analysis of the Extended Krylov Subspace Method for the Lyapunov equation*, Numerische Mathematik, Volume 118, Issue 3 (2011), Page 567-586.
59. MICOL PENNACCHIO AND V. SIMONCINI, *Fast structured AMG Preconditioning for the bidomain model in electrocardiology*, SIAM J. Scient. Computing., v. 33, n.2, pp. 721-745 (2011).
60. GIANLUCA BARBELLA, FEDERICO PEROTTI AND V. SIMONCINI, *Block Krylov subspace methods for the computation of structural response to turbulent wind*, Comput. Meth. Applied Mech. Eng. (CMAME), (2011), v. 200(23-24), pp. 2067-2082.
61. V. DRUSKIN AND V. SIMONCINI, *Adaptive rational Krylov subspaces for large-scale dynamical systems*, Systems & Control Letters, 60 (2011), pp. 546-560.
62. VLADIMIR DRUSKIN, LEONID KNIZHNERMAN AND V. SIMONCINI, *Analysis of the rational Krylov subspace and ADI methods for solving the Lyapunov equation*, SIAM J. Numer. Anal. 49 (2011), pp. 1875-1898.
63. TATJANA STYKEL AND V. SIMONCINI, *Krylov subspace methods for projected Lyapunov equations*, Applied Numerical Mathematics, 62 (2012), pp. 35–50.
64. VOLKER MEHRMANN , CHRISTIAN SCHRDER AND V. SIMONCINI, *An Implicitly-restarted Krylov Method for Real Symmetric/Skew-Symmetric Eigenproblems*, Linear Algebra and Appl., 436 (10), (2012), pp. 4070-4087.
65. V. SIMONCINI, *Reduced order solution of structured linear systems arising in certain PDE-constrained optimization problems*, Computational Optimization and Applications, 53 (2), (2012), pp. 591-617.
66. LARS ELDÉN AND V. SIMONCINI, *Solving ill-posed Linear Systems with GMRES and a singular Preconditioner*, SIAM J. Matrix Anal. Appl., v.33 (4), (2012), pp.1369–1394.
67. D. SESANA AND V. SIMONCINI, *Spectral analysis of inexact constraint preconditioning for symmetric saddle point matrices*, Linear Algebra and Appl., v.438 (2013), pp.2683-2700.
68. WOLFGANG KRENDL, V. SIMONCINI AND WALTER ZULEHNER, *Stability Estimates and Structural Spectral Properties of Saddle Point Problems*, Numerische Mathematik: Volume 124, Issue 1 (2013), Page 183-213.
69. M. ZASLAVSKY, V. DRUSKIN, A. ABUBAKAR, T. HABASHY, AND V. SIMONCINI, *Large-scale Gauss-Newton inversion of transient CSEM data using the model reduction framework*, Geophysics, v. 78, n. 4 (July-August 2013); pp. E161-E171.
70. YIDING LIN AND V. SIMONCINI, *Minimal residual methods for large scale Lyapunov equations*, Applied Numerical Mathematics, v.72 (2013), pp.52-71.
71. VLADIMIR DRUSKIN, V. SIMONCINI AND MIKHAIL ZASLAVSKY, *Solution of the time-domain inverse resistivity problem in the model reduction framework Part I. One-dimensional problem with SISO data*, SIAM J. Scient. Comput., v.35 n.3, (2013) pp. A1621-A1640.
72. STEPHEN SHANK AND V. SIMONCINI, *Krylov subspace methods for large scale constrained Sylvester equations*, SIAM. J. Matrix Anal. and Appl. 34-4 (2013), pp. 1448-1463.
73. CLAUDIO CANUTO , V. SIMONCINI AND MARCO VERANI, *On the decay of the inverse of matrices that are sum of Kronecker products*, Linear Algebra and its Applications, Volume 452, 1 July 2014, Pages 21-39.

74. VLADIMIR DRUSKIN, V. SIMONCINI AND MIKHAIL ZASLAVSKY, *Adaptive tangential interpolation in rational Krylov subspaces for MIMO model reduction data*, SIAM J. Matrix Analysis and Appl., v.35, n.2 (2014), 476-498.
75. V. SIMONCINI, DANIEL B. SZYLD AND MARLLINY MONSALVE, *On two numerical methods for the solution of large-scale algebraic Riccati equations*, IMA Journal of Numerical Analysis, v.34, n.3, (2014), pp.904-920.
76. YIDING LIN AND V. SIMONCINI, *A new subspace iteration method for the algebraic Riccati equation*, pp.1-25, July 2013. To appear in Numerical Linear Algebra w/Apl. DOI: 10.1002/nla.1936
77. CLAUDIO CANUTO , V. SIMONCINI AND MARCO VERANI, *Contraction and optimality properties of an adaptive Legendre-Galerkin method: the multi-dimensional case* , pp.1-32, July 2014. To appear in J. Scientific Computing (JOMP). DOI: 10.1007/s10915-014-9912-3.

Publications in Proceedings and Books - Peer Reviewed

1. A. MESSINA, P. LONDRILLO, L. MOSCARDINI AND V. SIMONCINI, *Numerical experiments on gravitating systems*, in IX Italian Conf. on General Rel. and Grav. Physics, Cianci et al. eds, pp. 338-352. World Scientific (Singapore), 1991.
2. V. SIMONCINI, *An Iterative Procedure for Computing the Null Basis*, in Iterative Methods in Linear Algebra, II, IMACS Series in Computational and Applied Mathematics, S. Margenov and P. Vassilevski, eds., vol. 3, 1996, pp. 413-423.
3. E. GALLOPOULOS AND V. SIMONCINI, "Iterative solution of multiple linear systems: Theory, practice, parallelism and applications", Advances in Parallel and Vector Processing for Structural Mechanics: Proc. Second Int'l. Conf. on Computational Structures Technology, eds. B.H.V. Topping and M. Papadrakakis (1994), pp. 47-51.
4. V. SIMONCINI, *Linear systems with a quadratic parameter and application to structural dynamics*, in Iterative methods in Scientific Computation II, IMACS Series Computational and Applied Mathematics, D. Kincaid and A. Elster eds. vol. 5, 1999, pp. 451-461.
5. A.FERIANI, F. PEROTTI AND V.SIMONCINI, *Numerical methods for the performance of direct frequency domain analysis*, in *Structural Dynamics - EURODYN '99*, Prague, June 1999, pp. 145-150, L. Fryba and J.Naprstek eds, 1999 Balkema, Rotterdam
6. F. PEROTTI AND V. SIMONCINI, *Computational aspects in direct frequency domain analysis*, "Structural Dynamics - EURODYN 2002", Proc. of 4th International Conference on Structural Dynamics, "Structural Dynamics - EURODYN 2002", Munich, 2-5 September 2002, Grundmann & Schueller (eds.) Zwets & Zeitlinger, Lisse (2002), pp. 685-690.
7. C. BEKAS, E. KOKIOPOULOU, E. GALLOPOULOS AND V. SIMONCINI, *Parallel Computation of Pseudospectra using Transfer Functions on a MATLAB-MPI Cluster Platform* D. Kranzlmüller, P. Kacsuk, J. Dongarra, J. Volkert (Eds.): "Recent Advances in Parallel Virtual Machine and Message Passing Interface" Proc. 9th European PVM/MPI Users' Group Meeting, Springer-Verlag, Lecture Notes in Computer Science, Vol. 2474, Linz, Austria, September 29-October 2, 2002.
8. V. SIMONCINI AND D. B. SZYLD, *Relaxed Krylov subspace approximation*, PAMM v. 5, n.1 (Dec. 2005), pp.797-800.
9. F. PEROTTI AND V. SIMONCINI, *Analytical and Numerical Techniques in frequency domain response computation*, in *Recent research developments in Structural Dynamics 2002*, Chapter A "Computational methods", A. Luongo Eds., Research Signpost Pub., 2003, pp. 33-54.

10. M. PENNACCHIO AND V. SIMONCINI, *Substructuring Preconditioners for the Bidomain Extracellular Potential Problem*, Numerical Mathematics and advanced Applications. Proceedings of ENUMATH 2005, Springer-Verlag (2006), pag. 459-466.
11. A. FROMMER AND V. SIMONCINI, *Matrix Functions*, “Model Order Reduction: Theory, Research Aspects and Applications”, Mathematics in Industry, Schilders, Wil H. A. and van der Vorst, Henk A. eds, Springer, Heidelberg, 2008.
12. A. FROMMER AND V. SIMONCINI, *Error bounds for Lanczos approximations of rational functions of matrices*, in “Numerical Validation”, Mathematics in Industry, Lectures Notes in Computer Science, Annie Cuyt and Walter Krämer and Peter Markstein and Wolfram Luther eds, Springer, 2009, v. 5492, pp.203-216.
13. BARBELLA G., PEROTTI F., SIMONCINI V.,, *A numerical procedure for the dynamic response of tall buildings subject to turbulent wind excitation*, 5th European and African Conference on Wind Engineering, CD-rom proc, Firenze 19-23 July, 2009.
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