Valeria Simoncini

List of Publications by Citations

102 papers	3,631 citations	32 h-index	58 g-index
105 ext. papers	3,961 ext. citations	2.1 avg, IF	6.08 L-index

#	Paper	IF	Citations
102	A FAMILY OF MIMETIC FINITE DIFFERENCE METHODS ON POLYGONAL AND POLYHEDRAL MESHES. *Mathematical Models and Methods in Applied Sciences*, **2005**, 15, 1533-1551	3.5	278
101	Recent computational developments in Krylov subspace methods for linear systems. *Numerical Linear Algebra With Applications*, **2007**, 14, 1-59	1.6	218
100	A New Iterative Method for Solving Large-Scale Lyapunov Matrix Equations. *SIAM Journal of Scientific Computing*, **2007**, 29, 1268-1288	2.6	196
99	Computational Methods for Linear Matrix Equations. *SIAM Review*, **2016**, 58, 377-441	7.4	191
98	Theory of Inexact Krylov Subspace Methods and Applications to Scientific Computing. *SIAM Journal of Scientific Computing*, **2003**, 25, 454-477	2.6	133
97	Iterative system solvers for the frequency analysis of linear mechanical systems. *Computer Methods in Applied Mechanics and Engineering*, **2000**, 190, 1719-1739	5.7	106
96	A new discretization methodology for diffusion problems on generalized polyhedral meshes. *Computer Methods in Applied Mechanics and Engineering*, **2007**, 196, 3682-3692	5.7	101
95	Adaptive rational Krylov subspaces for large-scale dynamical systems. *Systems and Control Letters*, **2011**, 60, 546-560	2.4	96
94	An Iterative Method for Nonsymmetric Systems with Multiple Right-Hand Sides. *SIAM Journal of Scientific Computing*, **1995**, 16, 917-933	2.6	96
93	Block triangular preconditioners for symmetric saddle-point problems. *Applied Numerical Mathematics*, **2004**, 49, 63-80	2.5	94
92	Block-diagonal and indefinite symmetric preconditioners for mixed finite element formulations. *Numerical Linear Algebra With Applications*, **2000**, 7, 585-616	1.6	92
91	On the eigenvalues of a class of saddle point matrices. *Numerische Mathematik*, **2006**, 103, 173-196	2.2	89
90	Convergence properties of block GMRES and matrix polynomials. *Linear Algebra and Its Applications*, **1996**, 247, 97-119	0.9	84
89	Spectral Properties of the Hermitian and Skew-Hermitian Splitting Preconditioner for Saddle Point Problems. *SIAM Journal on Matrix Analysis and Applications*, **2004**, 26, 377-389	1.5	78
88	Flexible Inner-Outer Krylov Subspace Methods. *SIAM Journal on Numerical Analysis*, **2002**, 40, 2219-2239	2.4	77
87	A Quasi-Minimal Residual Variant of the Bi-CGSTAB Algorithm for Nonsymmetric Systems. *SIAM Journal of Scientific Computing*, **1994**, 15, 338-347	2.6	74
86	Inexact Rayleigh Quotient-Type Methods for Eigenvalue Computations. *BIT Numerical Mathematics*, **2002**, 42, 159-182	1.7	73

85	Efficient algebraic solution of reaction‐diffusion systems for the cardiac excitation process. *Journal of Computational and Applied Mathematics*, **2002**, 145, 49-70	2.4	70
84	Krylov Subspace Methods for Saddle Point Problems with Indefinite Preconditioning. *SIAM Journal on Matrix Analysis and Applications*, **2002**, 24, 368-391	1.5	70
83	Analysis of the Rational Krylov Subspace and ADI Methods for Solving the Lyapunov Equation. *SIAM Journal on Numerical Analysis*, **2011**, 49, 1875-1898	2.4	66
82	Analysis of Projection Methods for Rational Function Approximation to the Matrix Exponential. *SIAM Journal on Numerical Analysis*, **2006**, 44, 613-635	2.4	59
81	Algebraic multigrid preconditioners for the bidomain reaction‐diffusion system. *Applied Numerical Mathematics*, **2009**, 59, 3033-3050	2.5	50
80	Acceleration Techniques for Approximating the Matrix Exponential Operator. *SIAM Journal on Matrix Analysis and Applications*, **2008**, 30, 657-683	1.5	50
79	Restarted Full Orthogonalization Method for Shifted Linear Systems. *BIT Numerical Mathematics*, **2003**, 43, 459-466	1.7	48
78	On the Numerical Solution of $(lambda^2 A + lambda B + C), x = b$ and Application to Structural Dynamics. *SIAM Journal of Scientific Computing*, **2002**, 23, 1875-1897	2.6	45
77	On the numerical solution of $AX - XB = C$. *BIT Numerical Mathematics*, **1996**, 36, 814-830	1.7	38
76	Stability estimates and structural spectral properties of saddle point problems. *Numerische Mathematik*, **2013**, 124, 183-213	2.2	35
75	On the Occurrence of Superlinear Convergence of Exact and Inexact Krylov Subspace Methods. *SIAM Review*, **2005**, 47, 247-272	7.4	35
74	Convergence analysis of the extended Krylov subspace method for the Lyapunov equation. *Numerische Mathematik*, **2011**, 118, 567-586	2.2	34
73	A hybrid block GMRES method for nonsymmetric systems with multiple right-hand sides. *Journal of Computational and Applied Mathematics*, **1996**, 66, 457-469	2.4	34
72	On two numerical methods for the solution of large-scale algebraic Riccati equations. *IMA Journal of Numerical Analysis*, **2014**, 34, 904-920	1.8	32
71	Dynamics of actively regulated gene networks. *Physica D: Nonlinear Phenomena*, **2011**, 240, 779-794	3.3	32
70	Stopping Criteria for Rational Matrix Functions of Hermitian and Symmetric Matrices. *SIAM Journal of Scientific Computing*, **2008**, 30, 1387-1412	2.6	31
69	Linear Algebra Methods in a Mixed Approximation of Magnetostatic Problems. *SIAM Journal of Scientific Computing*, **1999**, 21, 1085-1101	2.6	26
68	Decay Bounds for Functions of Hermitian Matrices with Banded or Kronecker Structure. *SIAM Journal on Matrix Analysis and Applications*, **2015**, 36, 1263-1282	1.5	25

67	Krylov subspace methods for projected Lyapunov equations. *Applied Numerical Mathematics*, **2012**, 62, 35-50	2.5	25
66	Efficient low-rank solution of generalized Lyapunov equations. *Numerische Mathematik*, **2016**, 134, 327-342		24
65	A new subspace iteration method for the algebraic Riccati equation. *Numerical Linear Algebra With Applications*, **2015**, 22, 26-47	1.6	24
64	Adaptive Tangential Interpolation in Rational Krylov Subspaces for MIMO Dynamical Systems. *SIAM Journal on Matrix Analysis and Applications*, **2014**, 35, 476-498	1.5	24
63	Minimal residual methods for large scale Lyapunov equations. *Applied Numerical Mathematics*, **2013**, 72, 52-71	2.5	24
62	Interpreting IDR as a Petrov-Galerkin Method. *SIAM Journal of Scientific Computing*, **2010**, 32, 1898-1912	2.6	24
61	A Stabilized QMR Version of Block BiCG. *SIAM Journal on Matrix Analysis and Applications*, **1997**, 18, 419-434		24
60	Preserving geometric properties of the exponential matrix by block Krylov subspace methods. *BIT Numerical Mathematics*, **2006**, 46, 813-830	1.7	24
59	Spectral Analysis of Saddle Point Matrices with Indefinite Leading Blocks. *SIAM Journal on Matrix Analysis and Applications*, **2010**, 31, 1152-1171	1.5	23
58	Fast Structured AMG Preconditioning for the Bidomain Model in Electrocardiology. *SIAM Journal of Scientific Computing*, **2011**, 33, 721-745	2.6	23
57	Convergence Analysis of Projection Methods for the Numerical Solution of Large Lyapunov Equations. *SIAM Journal on Numerical Analysis*, **2009**, 47, 828-843	2.4	23
56	Variable Accuracy of Matrix-Vector Products in Projection Methods for Eigencomputation. *SIAM Journal on Numerical Analysis*, **2005**, 43, 1155-1174	2.4	23
55	On the Convergence of Restarted Krylov Subspace Methods. *SIAM Journal on Matrix Analysis and Applications*, **2000**, 22, 430-452	1.5	23
54	Matrix-equation-based strategies for convection-diffusion equations. *BIT Numerical Mathematics*, **2016**, 56, 751-776	1.7	22
53	An Efficient Reduced Basis Solver for Stochastic Galerkin Matrix Equations. *SIAM Journal of Scientific Computing*, **2017**, 39, A141-A163	2.6	22
52	Analysis of the Rational Krylov Subspace Projection Method for Large-Scale Algebraic Riccati Equations. *SIAM Journal on Matrix Analysis and Applications*, **2016**, 37, 1655-1674	1.5	22
51	Matrix Functions. *Mathematics in Industry*, **2008**, 275-303	0.2	22
50	Approximation of functions of large matrices with Kronecker structure. *Numerische Mathematik*, **2017**, 135, 1-26	2.2	18

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49	On the decay of the inverse of matrices that are sum of Kronecker products. *Linear Algebra and Its Applications*, **2014**, 452, 21-39	0.9	18
48	An implicitly-restarted Krylov subspace method for real symmetric/skew-symmetric eigenproblems. *Linear Algebra and Its Applications*, **2012**, 436, 4070-4087	0.9	18
47	Extended Krylov subspace for parameter dependent systems. *Applied Numerical Mathematics*, **2010**, 60, 550-560	2.5	18
46	Preconditioning of Active-Set Newton Methods for PDE-constrained Optimal Control Problems. *SIAM Journal of Scientific Computing*, **2015**, 37, S472-S502	2.6	17
45	Solving Ill-Posed Linear Systems with GMRES and a Singular Preconditioner. *SIAM Journal on Matrix Analysis and Applications*, **2012**, 33, 1369-1394	1.5	16
44	Large-scale Gauss-Newton inversion of transient controlled-source electromagnetic measurement data using the model reduction framework. *Geophysics*, **2013**, 78, E161-E171	3.1	16
43	An Optimal Iterative Solver for Symmetric Indefinite Systems Stemming from Mixed Approximation. *ACM Transactions on Mathematical Software*, **2011**, 37, 1-22	2.3	16
42	Substructuring Preconditioners for Mortar Discretization of a Degenerate Evolution Problem. *Journal of Scientific Computing*, **2008**, 36, 391-419	2.3	15
41	Solution of the Time-Domain Inverse Resistivity Problem in the Model Reduction Framework Part I. One-Dimensional Problem with SISO Data. *SIAM Journal of Scientific Computing*, **2013**, 35, A1621-A1640	2.6	14
40	A comparison of reduced and unreduced KKT systems arising from interior point methods. *Computational Optimization and Applications*, **2017**, 68, 1-27	1.4	13
39	Reduced order solution of structured linear systems arising in certain PDE-constrained optimization problems. *Computational Optimization and Applications*, **2012**, 53, 591-617	1.4	13
38	Spectral analysis of inexact constraint preconditioning for symmetric saddle point matrices. *Linear Algebra and Its Applications*, **2013**, 438, 2683-2700	0.9	13
37	Spectral estimates for unreduced symmetric KKT systems arising from Interior Point methods. *Numerical Linear Algebra With Applications*, **2016**, 23, 776-800	1.6	13
36	Algebraic formulations for the solution of the nullspace-free eigenvalue problem using the inexact Shift-and-Invert Lanczos method. *Numerical Linear Algebra With Applications*, **2003**, 10, 357-375	1.6	11
35	Preconditioning PDE-constrained optimization with L1-sparsity and control constraints. *Computers and Mathematics With Applications*, **2017**, 74, 1059-1075	2.7	10
34	Block Krylov subspace methods for the computation of structural response to turbulent wind. *Computer Methods in Applied Mechanics and Engineering*, **2011**, 200, 2067-2082	5.7	9
33	A new investigation of the extended Krylov subspace method for matrix function evaluations. *Numerical Linear Algebra With Applications*, **2009**, 17, n/a-n/a	1.6	9
32	New conditions for non-stagnation of minimal residual methods. *Numerische Mathematik*, **2008**, 109, 477-487	2.2	9

31	Acquired Clustering Properties and Solution of Certain Saddle Point Systems. *SIAM Journal on Matrix Analysis and Applications*, **2010**, 31, 2754-2768	1.5	8
30	Analysis of a Minimum Perturbation Algorithm for Nonsymmetric Linear Systems. *SIAM Journal on Numerical Analysis*, **1997**, 34, 48-66	2.4	8
29	Inexact Arnoldi residual estimates and decay properties for functions of non-Hermitian matrices. *BIT Numerical Mathematics*, **2019**, 59, 969-986	1.7	7
28	Krylov Subspace Methods for Large-Scale Constrained Sylvester Equations. *SIAM Journal on Matrix Analysis and Applications*, **2013**, 34, 1448-1463	1.5	7
27	Numerical solution of parameter-dependent linear systems. *Numerical Linear Algebra With Applications*, **2005**, 12, 923-940	1.6	7
26	A new variant of restarted GMRES. *Numerical Linear Algebra With Applications*, **1999**, 6, 61-77	1.6	7
25	Computationally enhanced projection methods for symmetric Sylvester and Lyapunov matrix equations. *Journal of Computational and Applied Mathematics*, **2018**, 330, 648-659	2.4	6
24	Contraction and Optimality Properties of an Adaptive Legendre Galerkin Method: The Multi-Dimensional Case. *Journal of Scientific Computing*, **2015**, 63, 769-798	2.3	6
23	Numerical Methods for Large-Scale Lyapunov Equations with Symmetric Banded Data. *SIAM Journal of Scientific Computing*, **2018**, 40, A3581-A3608	2.6	6
22	Approximating the leading singular triplets of a large matrix function. *Applied Numerical Mathematics*, **2017**, 113, 26-43	2.5	5
21	Solution of linear systems from an optimal control problem arising in wind simulation. *Numerical Linear Algebra With Applications*, **2010**, 17, 895-915	1.6	5
20	Remarks on Non-Linear Spectral Perturbation. *BIT Numerical Mathematics*, **1999**, 39, 350-365	1.7	5
19	Matrix-oriented discretization methods for reaction diffusion PDEs: Comparisons and applications. *Computers and Mathematics With Applications*, **2020**, 79, 2067-2085	2.7	5
18	Error estimates for iterative algorithms for minimizing regularized quadratic subproblems. *Optimization Methods and Software*, **2020**, 35, 304-328	1.3	5
17	Optimality Properties of Galerkin and Petrov Galerkin Methods for Linear Matrix Equations. *Vietnam Journal of Mathematics*, **2020**, 48, 791-807	0.5	3
16	Projection methods for large-scale T-Sylvester equations. *Mathematics of Computation*, **2016**, 85, 2427-2455	4.5	3
15	Stability and Accuracy of Inexact Interior Point Methods for Convex Quadratic Programming. *Journal of Optimization Theory and Applications*, **2017**, 175, 450-477	1.6	3
14	A Low-Rank Matrix Equation Method for Solving PDE-Constrained Optimization Problems. *SIAM Journal of Scientific Computing*, S637-S654	2.6	3

List of Publications

13	Tensor-Train decomposition for image recognition. *Calcolo*, **2020**, 57, 1	1.5	2
12	Order Reduction Methods for Solving Large-Scale Differential Matrix Riccati Equations. *SIAM Journal of Scientific Computing*, **2020**, 42, A2182-A2205	2.6	2
11	Numerical solution of a class of third order tensor linear equations. *Bolletino Dell Unione Matematica Italiana*, **2020**, 13, 429-439	0.6	2
10	The Sherman–Morrison–Woodbury formula for generalized linear matrix equations and applications. *Numerical Linear Algebra With Applications*, **2021**, 28, e2384	1.6	2
9	A GMRES Convergence Analysis for Localized Invariant Subspace Ill-Conditioning. *SIAM Journal on Matrix Analysis and Applications*, **2019**, 40, 542-563	1.5	1
8	On the field of values of oblique projections. *Linear Algebra and Its Applications*, **2010**, 433, 810-818	0.9	1
7	The behavior of symmetric Krylov subspace methods for solving Mx=(M-I)v. *Linear Algebra and Its Applications*, **2004**, 380, 53-71	0.9	1
6	Order Reduction Approaches for the Algebraic Riccati Equation and the LQR Problem. *Springer INdAM Series*, **2018**, 89-109	0.4	1
5	Efficient Preconditioning for an Optimal Control Problem with the Time-Periodic Stokes Equations. *Lecture Notes in Computational Science and Engineering*, **2015**, 479-487	0.3	1
4	Matrix equation solving of PDEs in polygonal domains using conformal mappings. *Journal of Numerical Mathematics*, **2021**, 29, 221-244	3.4	1
3	Functions of rational Krylov space matrices and their decay properties. *Numerische Mathematik*, **2021**, 148, 99-126	2.2	0
2	An algorithm for approximating the singular triplets of complex symmetric matrices. *Numerical Linear Algebra With Applications*, **1997**, 4, 469-489	1.6	
1	On the numerical solution of a class of systems of linear matrix equations. *IMA Journal of Numerical Analysis*, **2020**, 40, 207-225	1.8	