

Owe Axelsson

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

105
papers

2,602
citations

23
h-index

50
g-index

115
ext. papers

2,825
ext. citations

1.8
avg, IF

5.49
L-index

#	Paper	IF	Citations
105	Iterative Solution Methods 1994 ,		670
104	On the rate of convergence of the preconditioned conjugate gradient method. <i>Numerische Mathematik</i> , 1986 , 48, 499-523	2.2	214
103	Conjugate gradient type methods for unsymmetric and inconsistent systems of linear equations. <i>Linear Algebra and Its Applications</i> , 1980 , 29, 1-16	0.9	163
102	Real valued iterative methods for solving complex symmetric linear systems. <i>Numerical Linear Algebra With Applications</i> , 2000 , 7, 197-218	1.6	147
101	On the eigenvalue distribution of a class of preconditioning methods. <i>Numerische Mathematik</i> , 1986 , 48, 479-498	2.2	145
100	A comparison of iterative methods to solve complex valued linear algebraic systems. <i>Numerical Algorithms</i> , 2014 , 66, 811-841	2.1	92
99	A class of A-stable methods. <i>BIT Numerical Mathematics</i> , 1969 , 9, 185-199	1.7	86
98	On approximate factorization methods for block matrices suitable for vector and parallel processors. <i>Linear Algebra and Its Applications</i> , 1986 , 77, 3-26	0.9	63
97	A Class of Nested Iteration Schemes for Linear Systems with a Coefficient Matrix with a Dominant Positive Definite Symmetric Part. <i>Numerical Algorithms</i> , 2004 , 35, 351-372	2.1	60
96	Iterative methods for the solution of the navier equations of elasticity. <i>Computer Methods in Applied Mechanics and Engineering</i> , 1978 , 15, 241-258	5.7	55
95	Preconditioning methods for linear systems arising in constrained optimization problems. <i>Numerical Linear Algebra With Applications</i> , 2003 , 10, 3-31	1.6	48
94	Eigenvalue estimates for preconditioned saddle point matrices. <i>Numerical Linear Algebra With Applications</i> , 2006 , 13, 339-360	1.6	47
93	Comparison of preconditioned Krylov subspace iteration methods for PDE-constrained optimization problems. <i>Numerical Algorithms</i> , 2016 , 73, 631-663	2.1	46
92	Preconditioning of Boundary Value Problems Using Elementwise Schur Complements. <i>SIAM Journal on Matrix Analysis and Applications</i> , 2009 , 31, 767-789	1.5	38
91	On the Additive Version of the Algebraic Multilevel Iteration Method for Anisotropic Elliptic Problems. <i>SIAM Journal of Scientific Computing</i> , 1999 , 20, 1807-1830	2.6	34
90	Error norm estimation and stopping criteria in preconditioned conjugate gradient iterations. <i>Numerical Linear Algebra With Applications</i> , 2001 , 8, 265-286	1.6	32
89	On iterative solvers in structural mechanics; separate displacement orderings and mixed variable methods. <i>Mathematics and Computers in Simulation</i> , 1999 , 50, 11-30	3.3	32

88	Generalized Augmented Matrix Preconditioning Approach and its Application to Iterative Solution of Ill-Conditioned Algebraic Systems. <i>SIAM Journal on Matrix Analysis and Applications</i> , 2001 , 22, 793-818 ^{1.5}	27
87	Stabilization of algebraic multilevel iteration methods; additive methods. <i>Numerical Algorithms</i> , 1999 , 21, 23-47	2.1 25
86	Two Simple Derivations of Universal Bounds for the C.B.S. Inequality Constant. <i>Applications of Mathematics</i> , 2004 , 49, 57-72	24
85	On a Class of Nonlinear Equation Solvers Based on the Residual Norm Reduction over a Sequence of Affine Subspaces. <i>SIAM Journal of Scientific Computing</i> , 1995 , 16, 228-249	2.6 24
84	Numerical and computational efficiency of solvers for two-phase problems. <i>Computers and Mathematics With Applications</i> , 2013 , 65, 301-314	2.7 23
83	Mesh Independent Superlinear PCG Rates Via Compact-Equivalent Operators. <i>SIAM Journal on Numerical Analysis</i> , 2007 , 45, 1495-1516	2.4 23
82	Iteration number for the conjugate gradient method. <i>Mathematics and Computers in Simulation</i> , 2003 , 61, 421-435	3.3 23
81	A robust structured preconditioner for time-harmonic parabolic optimal control problems. <i>Numerical Algorithms</i> , 2018 , 79, 575-596	2.1 23
80	Unified analysis of preconditioning methods for saddle point matrices. <i>Numerical Linear Algebra With Applications</i> , 2015 , 22, 233-253	1.6 22
79	Stable discretization of poroelasticity problems and efficient preconditioners for arising saddle point type matrices. <i>Computing and Visualization in Science</i> , 2012 , 15, 191-207	1 21
78	A class of preconditioned conjugate gradient methods for the solution of a mixed finite element discretization of the biharmonic operator. <i>International Journal for Numerical Methods in Engineering</i> , 1979 , 14, 1001-1019	2.4 21
77	A new version of a preconditioning method for certain two-by-two block matrices with square blocks. <i>BIT Numerical Mathematics</i> , 2019 , 59, 321-342	1.7 21
76	Preconditioning methods for eddy-current optimally controlled time-harmonic electromagnetic problems. <i>Journal of Numerical Mathematics</i> , 2019 , 27, 1-21	3.4 21
75	On the sublinear and superlinear rate of convergence of conjugate gradient methods. <i>Numerical Algorithms</i> , 2000 , 25, 1-22	2.1 20
74	Comparison of preconditioned Krylov subspace iteration methods for PDE-constrained optimization problems. <i>Numerical Algorithms</i> , 2017 , 74, 19-37	2.1 19
73	A preconditioner for optimal control problems, constrained by Stokes equation with a time-harmonic control. <i>Journal of Computational and Applied Mathematics</i> , 2017 , 310, 5-18	2.4 19
72	Preconditioning of matrices partitioned in 2×2 block form: eigenvalue estimates and Schwarz DD for mixed FEM. <i>Numerical Linear Algebra With Applications</i> , 2010 , 17, 787-810	1.6 17
71	Global integration of differential equations through Lobatto quadrature. <i>BIT Numerical Mathematics</i> , 1964 , 4, 69-86	1.7 17

70	A note on a class of strongly A-stable methods. <i>BIT Numerical Mathematics</i> , 1972 , 12, 1-4	1.7	16
69	A general approach to analyse preconditioners for two-by-two block matrices. <i>Numerical Linear Algebra With Applications</i> , 2013 , 20, 723-742	1.6	13
68	On a robust and scalable linear elasticity solver based on a saddle point formulation. <i>International Journal for Numerical Methods in Engineering</i> , 1999 , 44, 801-818	2.4	11
67	Error estimates for Galerkin methods for quasilinear parabolic and elliptic differential equations in divergence form. <i>Numerische Mathematik</i> , 1977 , 28, 1-14	2.2	11
66	On a two-level Newton-type procedure applied for solving non-linear elasticity problems. <i>International Journal for Numerical Methods in Engineering</i> , 2000 , 49, 1479-1493	2.4	10
65	Scalable algorithms for the solution of Navier's equations of elasticity. <i>Journal of Computational and Applied Mathematics</i> , 1995 , 63, 149-178	2.4	10
64	A note on preconditioning methods for time-periodic eddy current optimal control problems. <i>Journal of Computational and Applied Mathematics</i> , 2019 , 352, 262-277	2.4	10
63	NUMERICAL SOLUTION OF THE TIME-DEPENDENT NAVIER-STOKES EQUATION FOR VARIABLE DENSITY-VARIABLE VISCOSITY. PART I. <i>Mathematical Modelling and Analysis</i> , 2015 , 20, 232-260	1.3	9
62	Preconditioners for regularized saddle point problems with an application for heterogeneous Darcy flow problems. <i>Journal of Computational and Applied Mathematics</i> , 2015 , 280, 141-157	2.4	9
61	Avoiding slave points in an adaptive refinement procedure for convection-diffusion problems in 2D. <i>Computing (Vienna/New York)</i> , 1998 , 61, 331-357	2.2	9
60	Inexact Newton solvers in plasticity: theory and experiments. <i>Numerical Linear Algebra With Applications</i> , 1997 , 4, 133-152	1.6	8
59	On a generalized conjugate gradient orthogonal residual method. <i>Numerical Linear Algebra With Applications</i> , 1995 , 2, 467-479	1.6	7
58	Some computational aspects in the numerical solution of parabolic equations. <i>Journal of Computational and Applied Mathematics</i> , 1978 , 4, 129-142	2.4	7
57	PARALLEL SOLUTION METHODS AND PRECONDITIONERS FOR EVOLUTION EQUATIONS. <i>Mathematical Modelling and Analysis</i> , 2018 , 23, 287-308	1.3	7
56	The local Green's function method in singularly perturbed convection-diffusion problems. <i>Mathematics of Computation</i> , 2009 , 78, 153-153	1.6	7
55	An efficient preconditioning method for state box-constrained optimal control problems. <i>Journal of Numerical Mathematics</i> , 2018 , 26, 185-207	3.4	7
54	Superlinear convergence using block preconditioners for the real system formulation of complex Helmholtz equations. <i>Journal of Computational and Applied Mathematics</i> , 2018 , 340, 424-431	2.4	6
53	Preconditioning methods for high-order strongly stable time integration methods with an application for a DAE problem. <i>Numerical Linear Algebra With Applications</i> , 2015 , 22, 930-949	1.6	6

52	A Survey of Algebraic Multilevel Iteration (AMLI) Methods. <i>BIT Numerical Mathematics</i> , 2003 , 43, 863-879.	1.7	6
51	On the solution of high order stable time integration methods. <i>Boundary Value Problems</i> , 2013 , 2013, 108	2.1	4
50	Milestones in the Development of Iterative Solution Methods. <i>Journal of Electrical and Computer Engineering</i> , 2010 , 2010, 1-33	1.9	4
49	Conditioning analysis of block incomplete factorizations and its application to elliptic equations. <i>Numerische Mathematik</i> , 1997 , 78, 189-209	2.2	4
48	A unified framework for the construction of various algebraic multilevel preconditioning methods. <i>Acta Mathematicae Applicatae Sinica</i> , 1999 , 15, 132-143	0.3	4
47	Continuation Newton methods. <i>Computers and Mathematics With Applications</i> , 2015 , 70, 2621-2637	2.7	3
46	Low-rank improvements of two-level grid preconditioned matrices. <i>Journal of Computational and Applied Mathematics</i> , 2018 , 340, 432-442	2.4	3
45	Parameter modified versions of preconditioning and iterative inner product free refinement methods for two-by-two block matrices. <i>Linear Algebra and Its Applications</i> , 2019 , 582, 403-429	0.9	3
44	Material Parameter Identification with Parallel Processing and Geo-applications. <i>Lecture Notes in Computer Science</i> , 2012 , 366-375	0.9	3
43	Incomplete Factorization Preconditioning Methods 1994 , 252-313		3
42	AN ITERATIVE SOLUTION METHOD FOR SCHUR COMPLEMENT SYSTEMS WITH INEXACT INNER SOLVER 1999 ,		3
41	Efficient iterative solvers for a complex valued two-by-two block linear system with application to parabolic optimal control problems. <i>Applied Numerical Mathematics</i> , 2020 , 152, 422-445	2.5	3
40	Optimality properties of a square block matrix preconditioner with applications. <i>Computers and Mathematics With Applications</i> , 2020 , 80, 286-294	2.7	3
39	Computational methods for boundary optimal control and identification problems. <i>Mathematics and Computers in Simulation</i> , 2021 , 189, 276-290	3.3	3
38	A coarse-fine-mesh stabilization for an alternating Schwarz domain decomposition method. <i>Numerical Linear Algebra With Applications</i> , 2019 , 26, e2236	1.6	2
37	Preconditioning of two-by-two block matrix systems with square matrix blocks, with applications 2017 , 62, 537-559		2
36	A survey of some estimates of eigenvalues and condition numbers for certain preconditioned matrices. <i>Journal of Computational and Applied Mathematics</i> , 1997 , 80, 241-264	2.4	2
35	OPTIMAL PRECONDITIONERS BASED ON RATE OF CONVERGENCE ESTIMATES FOR THE CONJUGATE GRADIENT METHOD. <i>Numerical Functional Analysis and Optimization</i> , 2001 , 22, 277-302	1	2

34	Preconditioners for Time-Harmonic Optimal Control Eddy-Current Problems. <i>Lecture Notes in Computer Science</i> , 2018 , 47-54	0.9	2
33	Discretization error estimates in maximum norm for convergent splittings of matrices with a monotone preconditioning part. <i>Journal of Computational and Applied Mathematics</i> , 2017 , 310, 155-164	2.4	1
32	High order time discretization for DAEs with efficient block preconditioners 2017 ,		1
31	Preconditioners for Mixed FEM Solution of Stationary and Nonstationary Porous Media Flow Problems. <i>Lecture Notes in Computer Science</i> , 2015 , 3-14	0.9	1
30	Robust Preconditioning Estimates for Convection-Dominated Elliptic Problems via a Streamline Poincaré-Friedrichs Inequality. <i>SIAM Journal on Numerical Analysis</i> , 2014 , 52, 2957-2976	2.4	1
29	Iterative Signal Processing in Communications. <i>Journal of Electrical and Computer Engineering</i> , 2010 , 2010, 1-2	1.9	1
28	Finite Difference Methods 2004 ,		1
27	Optimizing Two-Level Preconditionings for the Conjugate Gradient Method. <i>Lecture Notes in Computer Science</i> , 2001 , 3-21	0.9	1
26	A Comparison of Preconditioning Methods for Saddle Point Problems with an Application to Porous Media Flow Problems. <i>Lecture Notes in Computer Science</i> , 2016 , 68-84	0.9	1
25	Preconditioning methods for block H-matrices 1991 , 169-184		1
24	Superior properties of the PRESB preconditioner for operators on two-by-two block form with square blocks. <i>Numerische Mathematik</i> , 2020 , 146, 335-368	2.2	1
23	Inner product free iterative solution and elimination methods for linear systems of a three-by-three block matrix form. <i>Journal of Computational and Applied Mathematics</i> , 2021 , 383, 113117	2.4	1
22	Exact inverse solution techniques for a class of complex valued block two-by-two linear systems. <i>Numerical Algorithms</i> , 1	2.1	1
21	Robust Preconditioners for Saddle Point Problems. <i>Lecture Notes in Computer Science</i> , 2003 , 158-166	0.9	1
20	Preconditioning Methods for Linear Systems with Saddle Point Matrices. <i>Lecture Notes in Computer Science</i> , 2002 , 784-793	0.9	1
19	An Exact Schur Complement Method for Time-Harmonic Optimal Control Problems. <i>Lecture Notes in Computer Science</i> , 2022 , 91-100	0.9	1
18	Corrigendum to Preconditioners for regularized saddle point problems with an application for heterogeneous Darcy flow problems[J. Comput. Appl. Math. 280 (2015) 141–157]. <i>Journal of Computational and Applied Mathematics</i> , 2016 , 298, 252-255	2.4	
17	Response to Comment on Preconditioning of matrices partitioned in 2 × 2 block form: Eigenvalue estimates and Schwarz DD for mixed FEM Numerical Linear Algebra With Applications, 2013 , 20, 536-539 ^{1.6}		

- 16 Finite Difference Methods **2017**, 1-52
- 15 Macro-elementwise preconditioning methods. *Mathematics and Computers in Simulation*, **2012**, 82, 1952-1963
- 14 An Additive Matrix Preconditioning Method with Application for Domain Decomposition and Two-Level Matrix Partitionings. *Lecture Notes in Computer Science*, **2010**, 76-83 0.9
- 13 The past 16 years of NLA. *Numerical Linear Algebra With Applications*, **2010**, 17, 1-1 1.6
- 12 AN EFFICIENT FINITE ELEMENT METHOD FOR NONLINEAR DIFFUSION PROBLEMS **1993**, 150-166
- 11 The Rate of Convergence of the Conjugate Gradient Method **1994**, 558-594
- 10 Estimates of Eigenvalues and Condition Numbers for Preconditioned Matrices **1994**, 402-448
- 9 On a Schur Complement Approach for Solving Two-Level Finite Element Systems. *Lecture Notes in Computer Science*, **2001**, 113-121 0.9
- 8 Mesh Independent Convergence Rates Via Differential Operator Pairs. *Lecture Notes in Computer Science*, **2008**, 3-15 0.9
- 7 Applications of the PRESB Preconditioning Method for OPT-PDE Problems. *Lecture Notes in Computational Science and Engineering*, **2021**, 73-81 0.3
- 6 A Survey of Optimal Control Problems for PDEs. *Studies in Computational Intelligence*, **2021**, 376-390 0.8
- 5 An Introduction and Summary of Use of Optimal Control Methods for PDEs. *Lecture Notes in Computer Science*, **2020**, 275-283 0.9
- 4 Extensions of a coarse-fine mesh stabilized Schwarz alternating iteration domain decomposition method. *Journal of Computational and Applied Mathematics*, **2020**, 364, 112341 2.4
- 3 An Inner Product Free Solution Method for an Equation of Motion with Indefinite Matrices. *Studies in Computational Intelligence*, **2021**, 37-47 0.8
- 2 Krylov improvements of the Uzawa method for Stokes type operator matrices. *Numerische Mathematik*, **2021**, 148, 611-631 2.2
- 1 Efficient iteration methods for complex systems with an indefinite matrix term. *Calcolo*, **2022**, 59, 1 1.5