Olaf Steinbach

List of Publications by Year
in descending order

98 papers	1,894 citations	304743 22 h-index	361022 35 g-index
106 all docs	106 docs citations	106 times ranked	770 citing authors

#	Article	IF	Citations
1	Numerical Approximation Methods for Elliptic Boundary Value Problems. , 2008, , .		278
2	On the stability of the L^2 projection in $H^1(Omega)$. Mathematics of Computation, 2001, 71, 147-157.	2.1	125
3	Boundary Element Tearing and Interconnecting Methods. Computing (Vienna/New York), 2003, 71, 205-228.	4.8	96
4	On C. Neumann's Method for Second-Order Elliptic Systems in Domains with Non-smooth Boundaries. Journal of Mathematical Analysis and Applications, 2001, 262, 733-748.	1.0	87
5	Domain decomposition methods via boundary integral equations. Journal of Computational and Applied Mathematics, 2000, 125, 521-537.	2.0	71
6	Space-Time Finite Element Methods for Parabolic Problems. Computational Methods in Applied Mathematics, 2015, 15, 551-566.	0.8	65
7	Stability Estimates for Hybrid Coupled Domain Decomposition Methods. Lecture Notes in Mathematics, 2003, , .	0.2	57
8	The fast multipole method for the symmetric boundary integral formulation. IMA Journal of Numerical Analysis, 2006, 26, 272-296.	2.9	47
9	Symmetric coupling of finite and boundary elements for exterior magnetic field problems. Mathematical Methods in the Applied Sciences, 2002, 25, 357-371.	2.3	45
10	A Note on the Stable One-Equation Coupling of Finite and Boundary Elements. SIAM Journal on Numerical Analysis, 2011, 49, 1521-1531.	2.3	37
11	Applications of a fast multipole Galerkin in boundary element method in linear elastostatics. Computing and Visualization in Science, 2005, 8, 201-209.	1.2	36
12	Inexact Data‐Sparse Boundary Element Tearing and Interconnecting Methods. SIAM Journal of Scientific Computing, 2007, 29, 290-314.	2.8	36
13	Comparison of algebraic multigrid methods for an adaptive space–time finite‐element discretization of the heat equation in 3D and 4D. Numerical Linear Algebra With Applications, 2018, 25, e2143.	1.6	34
14	Boundary element based multiresolution shape optimisation in electrostatics. Journal of Computational Physics, 2015, 297, 584-598.	3.8	33
15	On a generalized L_2 projection and some related stability estimates in Sobolev spaces. Numerische Mathematik, 2002, 90, 775-786.	1.9	30
16	An energy space finite element approach for elliptic Dirichlet boundary control problems. Numerische Mathematik, 2015, 129, 723-748.	1.9	30
17	Stable boundary element domain decomposition methods for the Helmholtz equation. Numerische Mathematik, 2011, 118, 171-195.	1.9	29
18	Artificial Multilevel Boundary Element Preconditioners. Proceedings in Applied Mathematics and Mechanics, 2003, 3, 539-542.	0.2	25

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19	A fast BE‑FE coupling scheme for partly immersed bodies. International Journal for Numerical Methods in Engineering, 2010, 81, 28-47.	2.8	25
20	Convergence Analysis of a Galerkin Boundary Element Method for the Dirichlet Laplacian Eigenvalue Problem. SIAM Journal on Numerical Analysis, 2012, 50, 710-728.	2.3	25
21	Coercive space-time finite element methods for initial boundary value problems. Electronic Transactions on Numerical Analysis, 0, 52, 154-194.	0.0	25
22	On the stability of the L_2 projection in fractional Sobolev spaces. Numerische Mathematik, 2001, 88, 367-379.	1.9	24
23	Refinement of flexible space–time finite element meshes and discontinuous Galerkin methods. Computing and Visualization in Science, 2011, 14, 189-205.	1.2	24
24	Coupled Boundary and Finite Element Tearing and Interconnecting Methods. , 2005, , 83-97.		22
25	Stabilized boundary element methods for exterior Helmholtz problems. Numerische Mathematik, 2008, 110, 145-160.	1.9	22
26	A boundary element method for the Dirichlet eigenvalue problem of the Laplace operator. Numerische Mathematik, 2009, 113, 281-298.	1.9	22
27	Coupled Finite And Boundary Element Methods for Fluid-Solid Interaction Eigenvalue Problems. SIAM Journal on Numerical Analysis, 2014, 52, 2400-2414.	2.3	22
28	A symmetric boundary element method for the Stokes problem in multiple connected domains. Mathematical Methods in the Applied Sciences, 2003, 26, 77-93.	2.3	18
29	Fast Evaluation of Volume Potentials in Boundary Element Methods. SIAM Journal of Scientific Computing, 2010, 32, 585-602.	2.8	18
30	Classical and all‑floating FETI methods for the simulation of arterial tissues. International Journal for Numerical Methods in Engineering, 2014, 99, 290-312.	2.8	17
31	Modified boundary integral formulations for the Helmholtz equation. Journal of Mathematical Analysis and Applications, 2007, 331, 396-407.	1.0	16
32	Boundary element methods for magnetostatic field problems: a critical view. Computing and Visualization in Science, 2011, 14, 117-130.	1.2	15
33	Boundary element methods for variational inequalities. Numerische Mathematik, 2014, 126, 173-197.	1.9	14
34	Combined boundary integral equations for acoustic scattering‑resonance problems. Mathematical Methods in the Applied Sciences, 2017, 40, 1516-1530.	2.3	14
35	Unstructured Space-Time Finite Element Methods for Optimal Control of Parabolic Equations. SIAM Journal of Scientific Computing, 2021, 43, A744-A771.	2.8	14
36	On a hybrid boundary element method. Numerische Mathematik, 2000, 84, 679-695.	1.9	13

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37	Mixed Approximations for Boundary Elements. SIAM Journal on Numerical Analysis, 2000, 38, 401-413.	2.3	13
38	Collision detection for complicated polyhedra using the fast multipole method or ray crossing. Archive of Applied Mechanics, 2007, 77, 503-521.	2.2	13
39	Is the oneâ€equation coupling of finite and boundary element methods always stable?. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2013, 93, 476-484.	1.6	13
40	A fast multipole boundary element method for a modified hypersingular boundary integral equation. Lecture Notes in Applied and Computational Mechanics, 2003, , 163-169.	2.2	13
41	Modified Combined Field Integral Equations for Electromagnetic Scattering. SIAM Journal on Numerical Analysis, 2009, 47, 1149-1167.	2.3	12
42	Boundary element methods for Dirichlet boundary control problems. Mathematical Methods in the Applied Sciences, 2010, 33, 2187-2205.	2.3	12
43	Fast Fourier transform for efficient evaluation of Newton potential in BEM. Applied Numerical Mathematics, 2014, 81, 1-14.	2.1	12
44	Adaptive Boundary Element Methods Based on Computational Schemes for Sobolev Norms. SIAM Journal of Scientific Computing, 2000, 22, 604-616.	2.8	11
45	Boundary Element Preconditioners for Problems Defined on Slender Domains. SIAM Journal of Scientific Computing, 2003, 24, 1450-1464.	2.8	11
46	On the stability of the non-symmetric BEM/FEM coupling in linear elasticity. Computational Mechanics, 2013, 51, 421-430.	4.0	10
47	Simulation of floating potentials in industrial applications by boundary element methods. Journal of Mathematics in Industry, 2014, 4, .	1.2	10
48	Space-Time Finite Element Discretization of Parabolic Optimal Control Problems with Energy Regularization. SIAM Journal on Numerical Analysis, 2021, 59, 675-695.	2.3	10
49	Robust Boundary Element Domain Decomposition Solvers in Acoustics. Lecture Notes in Computational Science and Engineering, 2011, , 277-284.	0.3	10
50	A note on the ellipticity of the single layer potential in two-dimensional linear elastostatics. Journal of Mathematical Analysis and Applications, 2004, 294, 1-6.	1.0	9
51	On the influence of the wall shear stress vector form on hemodynamic indicators. Computing and Visualization in Science, 2017, 18, 113-122.	1.2	9
52	A continuous finite element framework for the pressure Poisson equation allowing nonâ€Newtonian and compressible flow behavior. International Journal for Numerical Methods in Fluids, 2021, 93, 1435-1445.	1.6	9
53	Coupled Finite and Boundary Element Domain Decomposition Methods. , 2007, , 61-95.		8
54	Interpolationâ€based solution of a nonlinear eigenvalue problem in fluidâ€structure interaction. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 633-634.	0.2	8

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55	The numerical solution of a nonlinear hypersingular boundary integral equation. Journal of Computational and Applied Mathematics, 2001, 131, 267-280.	2.0	7
56	Boundary integral formulations for the forward problem in magnetic induction tomography. Mathematical Methods in the Applied Sciences, 2011, 34, 1144-1156.	2.3	7
57	Coupling of Discontinuous Galerkin Finite Element and Boundary Element Methods. SIAM Journal of Scientific Computing, 2012, 34, A1659-A1677.	2.8	7
58	7. Space-time finite element methods for parabolic evolution equations: discretization, a posteriori error estimation, adaptivity and solution. , 2019, , 207-248.		7
59	A generalized infâ€"sup stable variational formulation for the wave equation. Journal of Mathematical Analysis and Applications, 2022, 505, 125457.	1.0	7
60	Boundary Element Tearing and Interconnecting Domain Decomposition Methods. , 2006, , 461-490.		7
61	A note on initial higher-order convergence results for boundary element methods with approximated boundary conditions. Numerical Methods for Partial Differential Equations, 2000, 16, 581-588.	3.6	6
62	On the ellipticity of coupled finite element and one-equation boundary element methods for boundary value problems. Numerische Mathematik, 2014, 127, 567-593.	1.9	6
63	Trace and flux *a priori* error estimates in finite-element approximations of Signorni-type problems. IMA Journal of Numerical Analysis, 2016, 36, 1072-1095.	2.9	6
64	1. Space-time boundary element methods for the heat equation. , 2019, , 1-60.		6
65	A global residualâ€based stabilization for equalâ€order finite element approximations of incompressible flows. International Journal for Numerical Methods in Engineering, 2021, 122, 2075-2094.	2.8	6
66	Stable BETI Methods in Electromagnetics. Lecture Notes in Computational Science and Engineering, 2013, , 223-230.	0.3	5
67	A note on a modified Hilbert transform. Applicable Analysis, 2023, 102, 2583-2590.	1.3	5
68	A Boundary Integral Formulation for Poroelastic Materials. Proceedings in Applied Mathematics and Mechanics, 2009, 9, 595-596.	0.2	4
69	Boundary integral equations for Helmholtz boundary value and transmission problems. , 2013, , 253-292.		4
70	Regularization error estimates for distributed control problems in energy spaces. Mathematical Methods in the Applied Sciences, 2021, 44, 4176-4191.	2.3	4
71	A New Approach to Space-Time Boundary Integral Equations for the Wave Equation. SIAM Journal on Mathematical Analysis, 2022, 54, 1370-1392.	1.9	4
72	A natural domain decomposition method with non-matching grids. Applied Numerical Mathematics, 2005, 54, 362-377.	2.1	3

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73	Fast Boundary Element Methods for Industrial Applications in Magnetostatics. Lecture Notes in Applied and Computational Mechanics, 2012, , 111-143.	2.2	3
74	Adaptive space–time boundary element methods for the wave equation. Proceedings in Applied Mathematics and Mechanics, 2016, 16, 777-778.	0.2	3
75	A Stabilized Space–Time Finite Element Method for the Wave Equation. Lecture Notes in Computational Science and Engineering, 2019, , 341-370.	0.3	3
76	FETI Methods for the Simulation of Biological Tissues. Lecture Notes in Computational Science and Engineering, 2013, 91, 503-510.	0.3	3
77	Robust Discretization and Solvers for Elliptic Optimal Control Problems with Energy Regularization. Computational Methods in Applied Mathematics, 2022, 22, 97-111.	0.8	3
78	A note on the efficient evaluation of a modified Hilbert transformation. Journal of Numerical Mathematics, 2020, .	3.5	3
79	On the initial higher-order pressure convergence in equal-order finite element discretizations of the Stokes system. Computers and Mathematics With Applications, 2022, 109, 140-145.	2.7	3
80	Coupled Finite and Boundary Element Methods for Vibro-Acoustic Interface Problems. Lecture Notes in Computational Science and Engineering, 2014, , 507-515.	0.3	2
81	Error estimates for Neumann boundary control problems with energy regularization. Journal of Numerical Mathematics, 2016, 24, .	3.5	2
82	Space-time DG methods for the coupled electro-mechanical activation of the human heart. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 839-840.	0.2	1
83	Boundary element methods for parabolic boundary control problems. Journal of Integral Equations and Applications, 2014, 26, .	0.6	1
84	On the pressure Poisson equation for the Stokes system. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900425.	0.2	1
85	Space–time variational methods for Maxwell's equations. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900221.	0.2	1
86	Energy Space Approaches to the Cauchy Problem for Poisson's Equation. Acta Mathematica Vietnamica, 2020, 45, 693-707.	0.4	1
87	A DG Space–Time Domain Decomposition Method. Lecture Notes in Computational Science and Engineering, 2013, , 623-630.	0.3	1
88	An Algebraic Multigrid Method for an Adaptive Space–Time Finite Element Discretization. Lecture Notes in Computer Science, 2018, , 66-73.	1.3	1
89	8 Unstructured space-time finite element methods for optimal sparse control of parabolic equations. , 2022, , 167-188.		1
90	Special issue dedicated to IABEM 2006 and Prof. L. Gaul's 60th anniversary. Computational Mechanics, 2008, 41, 747-747.	4.0	0

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91	Editorial to this special issue dedicated to Wolfgang L. Wendland on the occasion of his 70th birthday. Mathematical Methods in the Applied Sciences, 2008, 31, 2013-2014.	2.3	0
92	Finite and Boundary Element Energy Approximations of Dirichlet Control Problems. , 2012, , 219-231.		0
93	Editorial: ZAMM 6-7 / 2013. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2013, 93, 372-372.	1.6	0
94	Analysis of a kinematic dynamo model with FEMâ€"BEM coupling. Mathematical Methods in the Applied Sciences, 2014, 37, 2484-2501.	2.3	0
95	Challenges and Applications of Boundary Element Domain Decomposition Methods. Lecture Notes in Computational Science and Engineering, 2008, , 131-142.	0.3	0
96	Preconditioned Space-Time Boundary Element Methods for the One-Dimensional Heat Equation. Lecture Notes in Computational Science and Engineering, 2018, , 243-251.	0.3	0
97	A Spaceâ€"Time Finite Element Method for the Linear Bidomain Equations. Lecture Notes in Computational Science and Engineering, 2019, , 323-339.	0.3	0
98	A Parallel Solver for a Preconditioned Space-Time Boundary Element Method for the Heat Equation. Lecture Notes in Computational Science and Engineering, 2020, , 108-116.	0.3	0