

Timo Betcke

List of Publications by Year in descending order

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39
papers

1,301
citations

361413

20
h-index

345221

36
g-index

40
all docs

40
docs citations

40
times ranked

844
citing authors

#	ARTICLE	IF	CITATIONS
1	NLEVP. ACM Transactions on Mathematical Software, 2013, 39, 1-28.	2.9	177
2	Stability and convergence of the method of fundamental solutions for Helmholtz problems on analytic domains. Journal of Computational Physics, 2008, 227, 7003-7026.	3.8	146
3	Solving Boundary Integral Problems with BEM++. ACM Transactions on Mathematical Software, 2015, 41, 1-40.	2.9	134
4	Reviving the Method of Particular Solutions. SIAM Review, 2005, 47, 469-491.	9.5	121
5	A Jacobi–Davidson-type projection method for nonlinear eigenvalue problems. Future Generation Computer Systems, 2004, 20, 363-372.	7.5	75
6	Condition number estimates for combined potential integral operators in acoustics and their boundary element discretisation. Numerical Methods for Partial Differential Equations, 2011, 27, 31-69.	3.6	69
7	Stroke type differentiation using spectrally constrained multifrequency EIT: evaluation of feasibility in a realistic head model. Physiological Measurement, 2014, 35, 1051-1066.	2.1	61
8	A Fast Parallel Solver for the Forward Problem in Electrical Impedance Tomography. IEEE Transactions on Biomedical Engineering, 2015, 62, 126-137.	4.2	52
9	An Exponentially Convergent Nonpolynomial Finite Element Method for Time-Harmonic Scattering from Polygons. SIAM Journal of Scientific Computing, 2010, 32, 1417-1441.	2.8	45
10	Quantum mushroom billiards. Chaos, 2007, 17, 043125.	2.5	37
11	The Generalized Singular Value Decomposition and the Method of Particular Solutions. SIAM Journal of Scientific Computing, 2008, 30, 1278-1295.	2.8	29
12	The boundary element method for light scattering by ice crystals and its implementation in BEM++. Journal of Quantitative Spectroscopy and Radiative Transfer, 2015, 167, 40-52.	2.3	29
13	A fast boundary element method for the scattering analysis of high-intensity focused ultrasound. Journal of the Acoustical Society of America, 2015, 138, 2726-2737.	1.1	26
14	Software frameworks for integral equations in electromagnetic scattering based on Calderón identities. Computers and Mathematics With Applications, 2017, 74, 2897-2914.	2.7	25
15	Bempp-cl: A fast Python based just-in-time compiling boundary element library.. Journal of Open Source Software, 2021, 6, 2879.	4.6	25
16	Correcting electrode modelling errors in EIT on realistic 3D head models. Physiological Measurement, 2015, 36, 2423-2442.	2.1	24
17	Perturbation, extraction and refinement of invariant pairs for matrix polynomials. Linear Algebra and Its Applications, 2011, 435, 514-536.	0.9	23
18	Numerical Estimation of Coercivity Constants for Boundary Integral Operators in Acoustic Scattering. SIAM Journal on Numerical Analysis, 2011, 49, 1572-1601.	2.3	22

#	ARTICLE	IF	CITATIONS
19	Optimal Scaling of Generalized and Polynomial Eigenvalue Problems. SIAM Journal on Matrix Analysis and Applications, 2009, 30, 1320-1338.	1.4	21
20	Product Algebras for Galerkin Discretisations of Boundary Integral Operators and their Applications. ACM Transactions on Mathematical Software, 2020, 46, 1-22.	2.9	14
21	Solving inverse electromagnetic scattering problems via domain derivatives. Inverse Problems, 2019, 35, 084005.	2.0	12
22	Adaptive BEM with optimal convergence rates for the Helmholtz equation. Computer Methods in Applied Mechanics and Engineering, 2019, 346, 260-287.	6.6	11
23	Calderon preconditioning of PMCHWT boundary integral equations for scattering by multiple absorbing dielectric particles. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 224, 383-395.	2.3	11
24	A fast full-wave solver for calculating ultrasound propagation in the body. Ultrasonics, 2021, 110, 106240.	3.9	11
25	Spectral decompositions and nonnormality of boundary integral operators in acoustic scattering. IMA Journal of Numerical Analysis, 2014, 34, 700-731.	2.9	9
26	Overresolving in the Laplace Domain for Convolution Quadrature Methods. SIAM Journal of Scientific Computing, 2017, 39, A188-A213.	2.8	8
27	Computationally Efficient Boundary Element Methods for High-Frequency Helmholtz Problems in Unbounded Domains. Geosystems Mathematics, 2017, , 215-243.	0.0	8
28	Benchmarking preconditioned boundary integral formulations for acoustics. International Journal for Numerical Methods in Engineering, 2021, 122, 5873-5897.	2.8	8
29	Accelerated Calderon preconditioning for Maxwell transmission problems. Journal of Computational Physics, 2022, 458, 111099.	3.8	5
30	Boundary Element Methods with Weakly Imposed Boundary Conditions. SIAM Journal of Scientific Computing, 2019, 41, A1357-A1384.	2.8	4
31	Adaptive boundary element methods for the computation of the electrostatic capacity on complex polyhedra. Journal of Computational Physics, 2019, 397, 108837.	3.8	3
32	Designing a High-Performance Boundary Element Library With OpenCL and Numba. Computing in Science and Engineering, 2021, 23, 18-28.	1.2	3
33	Boundary integral formulations for acoustic modelling of high-contrast media. Computers and Mathematics With Applications, 2022, 105, 136-149.	2.7	3
34	Frequency-robust preconditioning of boundary integral equations for acoustic transmission. Journal of Computational Physics, 2022, 462, 111229.	3.8	3
35	Accelerating frequency-domain numerical methods for weakly nonlinear focused ultrasound using nested meshes. Journal of the Acoustical Society of America, 2021, 150, 441-453.	1.1	1
36	Hybrid coupling of finite element and boundary element methods using Nitsche's method and the Calderon projection. Numerical Algorithms, 2022, 91, 997-1019.	1.9	1

#	ARTICLE	IF	CITATIONS
37	A Jacobiâ€“Davidson-type projection method for nonlinear eigenvalue problems. Future Generation Computer Systems, 2003, 20, 363-363.	7.5	0
38	Building integral equation methods with the open-source library BEM++. , 2016, , .		0
39	ExCALIBURâ€“U.K.â€™s Preparation for the Arrival of the Next Generation of HPC. Computing in Science and Engineering, 2022, 24, 5-7.	1.2	0