

Helmut Harbrecht

List of Publications by Year in descending order

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citations

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76
all docs

76
docs citations

76
times ranked

718
citing authors

#	ARTICLE	IF	CITATIONS
1	Analysis of Tensor Approximation Schemes for Continuous Functions. Foundations of Computational Mathematics, 2023, 23, 219-240.	2.5	7
2	Multilevel quadrature for elliptic problems on random domains by the coupling of FEM and BEM. Stochastics and Partial Differential Equations: Analysis and Computations, 2022, 10, 1619-1650.	0.9	2
3	Isogeometric multilevel quadrature for forward and inverse random acoustic scattering. Computer Methods in Applied Mechanics and Engineering, 2022, 388, 114242.	6.6	3
4	Isogeometric shape optimization of periodic structures in three dimensions. Computer Methods in Applied Mechanics and Engineering, 2022, 391, 114552.	6.6	2
5	Boundary Integral Operators for the Heat Equation in Time-Dependent Domains. Integral Equations and Operator Theory, 2022, 94, 1.	0.8	1
6	On the Numerical Solution of a Time-Dependent Shape Optimization Problem for the Heat Equation. SIAM Journal on Control and Optimization, 2021, 59, 931-953.	2.1	4
7	A fast direct solver for nonlocal operators in wavelet coordinates. Journal of Computational Physics, 2021, 428, 110056.	3.8	4
8	Approximating solution spaces as a product of polygons. Structural and Multidisciplinary Optimization, 2021, 64, 2225.	3.5	0
9	Sparse Grid Approximation of the Riccati Operator for Closed Loop Parabolic Control Problems with Dirichlet Boundary Control. SIAM Journal on Control and Optimization, 2021, 59, 4538-4562.	2.1	1
10	Multilevel methods for uncertainty quantification of elliptic PDEs with random anisotropic diffusion. Stochastics and Partial Differential Equations: Analysis and Computations, 2020, 8, 54-81.	0.9	1
11	Shape Optimization for Composite Materials and Scaffold Structures. Multiscale Modeling and Simulation, 2020, 18, 1136-1152.	1.6	3
12	Multilevel Quadrature for Elliptic Parametric Partial Differential Equations in Case of Polygonal Approximations of Curved Domains. SIAM Journal on Numerical Analysis, 2020, 58, 684-705.	2.3	6
13	Solving a Bernoulli type free boundary problem with random diffusion. ESAIM - Control, Optimisation and Calculus of Variations, 2020, 26, 56.	1.3	0
14	Singular value decomposition versus sparse grids: refined complexity estimates. IMA Journal of Numerical Analysis, 2019, 39, 1652-1671.	2.9	7
15	On the Algebraic Construction of Sparse Multilevel Approximations of Elliptic Tensor Product Problems. Journal of Scientific Computing, 2019, 78, 1272-1290.	2.3	1
16	Rapid computation of far-field statistics for random obstacle scattering. Engineering Analysis With Boundary Elements, 2019, 101, 243-251.	3.7	2
17	A sampling-based optimization algorithm for solution spaces with pair-wise-coupled design variables. Structural and Multidisciplinary Optimization, 2019, 60, 501-512.	3.5	3
18	Parametric representation of molecular surfaces. International Journal of Quantum Chemistry, 2019, 119, e25695.	2.0	3

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19	Frames for the Solution of Operator Equations in Hilbert Spaces with Fixed Dual Pairing. Numerical Functional Analysis and Optimization, 2019, 40, 65-84.	1.4	5
20	Error-Controlled Model Approximation for Gaussian Process Morphable Models. Journal of Mathematical Imaging and Vision, 2019, 61, 443-457.	1.3	2
21	Boosting Quantum Machine Learning Models with a Multilevel Combination Technique: Pople Diagrams Revisited. Journal of Chemical Theory and Computation, 2019, 15, 1546-1559.	5.3	70
22	Minimal energy problems for strongly singular Riesz kernels. Mathematische Nachrichten, 2018, 291, 55-85.	0.8	0
23	A fast isogeometric BEM for the three dimensional Laplace- and Helmholtz problems. Computer Methods in Applied Mechanics and Engineering, 2018, 330, 83-101.	6.6	45
24	The second order perturbation approach for elliptic partial differential equations on random domains. Applied Numerical Mathematics, 2018, 125, 159-171.	2.1	7
25	Mathematical analysis of the transmission dynamics of the liver fluke, <i>Opisthorchis viverrini</i> . Journal of Theoretical Biology, 2018, 439, 181-194.	1.7	39
26	Solving a free boundary problem with nonconstant coefficients. Mathematical Methods in the Applied Sciences, 2018, 41, 3653-3671.	2.3	1
27	Hierarchical matrix approximation for the uncertainty quantification of potentials on random domains. Journal of Computational Physics, 2018, 371, 506-527.	3.8	3
28	Analysis of interventions against the liver fluke, <i>opisthorchis viverrini</i> . Mathematical Biosciences, 2018, 303, 115-125.	1.9	10
29	A fast sparse grid based space-time boundary element method for the nonstationary heat equation. Numerische Mathematik, 2018, 140, 239-264.	1.9	7
30	ON BERNOULLI'S FREE BOUNDARY PROBLEM WITH A RANDOM BOUNDARY. , 2017, 7, 335-353.		6
31	An interpolation-based fast multipole method for higher-order boundary elements on parametric surfaces. International Journal for Numerical Methods in Engineering, 2016, 108, 1705-1728.	2.8	20
32	On the quasi-Monte Carlo method with Halton points for elliptic PDEs with log-normal diffusion. Mathematics of Computation, 2016, 86, 771-797.	2.1	12
33	Multilevel Accelerated Quadrature for PDEs with Log-Normally Distributed Diffusion Coefficient. SIAM-ASA Journal on Uncertainty Quantification, 2016, 4, 520-551.	2.0	18
34	A Note on Multilevel Based Error Estimation. Computational Methods in Applied Mathematics, 2016, 16, 447-458.	0.8	2
35	On the computation of solution spaces in high dimensions. Structural and Multidisciplinary Optimization, 2016, 54, 811-829.	3.5	19
36	Rapid Solution of Minimal Riesz Energy Problems. Numerical Methods for Partial Differential Equations, 2016, 32, 1535-1552.	3.6	1

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37	Optimization of current carrying multicables. Computational Optimization and Applications, 2016, 63, 237-271.	1.6	7
38	Stabilization of the trial method for the Bernoulli problem in case of prescribed Dirichlet data. Mathematical Methods in the Applied Sciences, 2015, 38, 2850-2863.	2.3	3
39	Wavelet formulation of the polarizable continuum model. II. Use of piecewise bilinear boundary elements. Physical Chemistry Chemical Physics, 2015, 17, 31566-31581.	2.8	10
40	Efficient approximation of random fields for numerical applications. Numerical Linear Algebra With Applications, 2015, 22, 596-617.	1.6	38
41	Shape Optimization for Quadratic Functionals and States with Random Right-Hand Sides. SIAM Journal on Control and Optimization, 2015, 53, 3081-3103.	2.1	15
42	Computing quantities of interest for random domains with second order shape sensitivity analysis. ESAIM: Mathematical Modelling and Numerical Analysis, 2015, 49, 1285-1302.	1.9	12
43	Riesz minimal energy problems on $C^{k,1}$ -manifolds. Mathematische Nachrichten, 2014, 287, 48-69.	0.8	13
44	Approximation of bi-variate functions: singular value decomposition versus sparse grids. IMA Journal of Numerical Analysis, 2014, 34, 28-54.	2.9	25
45	Improved trial methods for a class of generalized Bernoulli problems. Journal of Mathematical Analysis and Applications, 2014, 420, 177-194.	1.0	10
46	Second Moment Analysis for Robin Boundary Value Problems on Random Domains. , 2014, , 361-381.		2
47	On the Convergence of the Combination Technique. Lecture Notes in Computational Science and Engineering, 2014, , 55-74.	0.3	9
48	A Note on the Construction of L-Fold Sparse Tensor Product Spaces. Constructive Approximation, 2013, 38, 235-251.	3.0	17
49	BPX-preconditioning for isogeometric analysis. Computer Methods in Applied Mechanics and Engineering, 2013, 265, 63-70.	6.6	50
50	On the Numerical Solution of a Shape Optimization Problem for the Heat Equation. SIAM Journal of Scientific Computing, 2013, 35, A104-A121.	2.8	32
51	Combination technique based k-th moment analysis of elliptic problems with random diffusion. Journal of Computational Physics, 2013, 252, 128-141.	3.8	27
52	First order second moment analysis for stochastic interface problems based on low-rank approximation. ESAIM: Mathematical Modelling and Numerical Analysis, 2013, 47, 1533-1552.	1.9	31
53	On the construction of sparse tensor product spaces. Mathematics of Computation, 2012, 82, 975-994.	2.1	30
54	Preconditioning of wavelet BEM by the incomplete Cholesky factorization. Computing and Visualization in Science, 2012, 15, 319-329.	1.2	2

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55	On the low-rank approximation by the pivoted Cholesky decomposition. Applied Numerical Mathematics, 2012, 62, 428-440.	2.1	135
56	On Multilevel Quadrature for Elliptic Stochastic Partial Differential Equations. Lecture Notes in Computational Science and Engineering, 2012, , 161-179.	0.3	12
57	Sparse tensor finite elements for elliptic multiple scale problems. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 3100-3110.	6.6	8
58	On analytical derivatives for geometry optimization in the polarizable continuum model. Journal of Mathematical Chemistry, 2011, 49, 1928-1936.	1.5	2
59	An efficient numerical method for a shape-identification problem arising from the heat equation. Inverse Problems, 2011, 27, 065013.	2.0	19
60	A finite element method for elliptic problems with stochastic input data. Applied Numerical Mathematics, 2010, 60, 227-244.	2.1	33
61	Tracking Neumann Data for Stationary Free Boundary Problems. SIAM Journal on Control and Optimization, 2010, 48, 2901-2916.	2.1	18
62	On output functionals of boundary value problems on stochastic domains. Mathematical Methods in the Applied Sciences, 2009, 33, n/a-n/a.	2.3	3
63	Wavelet BEM on molecular surfaces: parametrization and implementation. Computing (Vienna/New) Tj ETQq1 1 0.784314 rgBT /Over 4.8 916		
64	A Newton method for reconstructing non star-shaped domains in electrical impedance tomography. Inverse Problems and Imaging, 2009, 3, 353-371.	1.1	5
65	Sparse second moment analysis for elliptic problems in stochastic domains. Numerische Mathematik, 2008, 109, 385-414.	1.9	93
66	Multilevel frames for sparse tensor product spaces. Numerische Mathematik, 2008, 110, 199-220.	1.9	41
67	A Newton method for Bernoulli's free boundary problem in three dimensions. Computing (Vienna/New) Tj ETQq1 1 0.784314 rgBT 4.8 21		
68	Analytical and numerical methods in shape optimization. Mathematical Methods in the Applied Sciences, 2008, 31, 2095-2114.	2.3	15
69	Compact gradient tracking in shape optimization. Computational Optimization and Applications, 2008, 39, 297-318.	1.6	5
70	Wavelet Galerkin Schemes for Boundary Integral Equations--Implementation and Quadrature. SIAM Journal of Scientific Computing, 2006, 27, 1347-1370.	2.8	96
71	Wavelets with patchwise cancellation properties. Mathematics of Computation, 2006, 75, 1871-1889.	2.1	26
72	Compression Techniques for Boundary Integral Equations--Asymptotically Optimal Complexity Estimates. SIAM Journal on Numerical Analysis, 2006, 43, 2251-2271.	2.3	137

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73	Coupling of FEM and BEM in Shape Optimization. Numerische Mathematik, 2006, 104, 47-68.	1.9	15
74	Efficient treatment of stationary free boundary problems. Applied Numerical Mathematics, 2006, 56, 1326-1339.	2.1	34
75	Biorthogonal wavelet bases for the boundary element method. Mathematische Nachrichten, 2004, 269-270, 167-188.	0.8	43
76	Multiscale preconditioning for the coupling of FEM-BEM. Numerical Linear Algebra With Applications, 2003, 10, 197-222.	1.6	15