

# Steffen BÄrm

## List of Publications by Year in descending order

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38  
papers

996  
citations

623734

14  
h-index

454955

30  
g-index

40  
all docs

40  
docs citations

40  
times ranked

592  
citing authors

#	ARTICLE	IF	CITATIONS
1	Introduction to hierarchical matrices with applications. <i>Engineering Analysis With Boundary Elements</i> , 2003, 27, 405-422.	3.7	265
2	Hybrid cross approximation of integral operators. <i>Numerische Mathematik</i> , 2005, 101, 221-249.	1.9	112
3	-matrix approximation of integral operators by interpolation. <i>Applied Numerical Mathematics</i> , 2002, 43, 129-143.	2.1	102
4	Low-Rank Approximation of Integral Operators by Interpolation. <i>Computing (Vienna/New York)</i> , 2004, 72, 325.	4.8	43
5	-Matrix Arithmetics in Linear Complexity. <i>Computing (Vienna/New York)</i> , 2006, 77, 1-28.	4.8	43
6	Approximation of solution operators of elliptic partial differential equations by $\mathcal{H}$ - and $\mathcal{H}^2$ -matrices. <i>Numerische Mathematik</i> , 2010, 115, 165-193.	1.9	40
7	Approximation of Integral Operators by Variable-Order Interpolation. <i>Numerische Mathematik</i> , 2005, 99, 605-643.	1.9	34
8	Construction of Data-Sparse $\mathcal{H}^2$ -Matrices by Hierarchical Compression. <i>SIAM Journal of Scientific Computing</i> , 2009, 31, 1820-1839.	2.8	29
9	$\mathcal{H}$ -factorization in preconditioners for augmented Lagrangian and grad-div stabilized saddle point systems. <i>International Journal for Numerical Methods in Fluids</i> , 2012, 68, 83-98.	1.6	26
10	Data-sparse approximation of non-local operators by $\mathcal{H}$ -matrices. <i>Journal of Computational and Applied Mathematics</i> , 2010, 233, 1-12.	0.9	25
11	$\mathcal{H}^2$ -matrices: Multilevel methods for the approximation of integral operators. <i>Computing and Visualization in Science</i> , 2004, 7, 173-181.	1.2	22
12	Approximation of integral operators by Green quadrature and nested cross approximation. <i>Numerische Mathematik</i> , 2016, 133, 409-442.	1.9	19
13	Directional matrix compression for high-frequency problems. <i>Numerical Linear Algebra With Applications</i> , 2017, 24, e2112.	1.6	19
14	Approximation of the high-frequency Helmholtz kernel by nested directional interpolation: error analysis. <i>Numerische Mathematik</i> , 2017, 137, 1-34.	1.9	16
15	Large-scale magnetostatic field calculation in finite element micromagnetics with $\mathcal{H}$ -matrices. <i>Journal of Magnetism and Magnetic Materials</i> , 2019, 477, 116-123.	2.3	14
16	Efficient arithmetic operations for rank-structured matrices based on hierarchical low-rank updates. <i>Computing and Visualization in Science</i> , 2013, 16, 247-258.	1.2	13
17	BEM with linear complexity for the classical boundary integral operators. <i>Mathematics of Computation</i> , 2004, 74, 1139-1178.	2.1	11
18	Distributed $\mathcal{H}^2$ -matrices for non-local operators. <i>Computing and Visualization in Science</i> , 2008, 11, 237-249.	1.2	11

#	ARTICLE	IF	CITATIONS
19	Adaptive Variable-Rank Approximation of General Dense Matrices. SIAM Journal of Scientific Computing, 2008, 30, 148-168.	2.8	8
20	Exploiting nested task-parallelism in the $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll" \rangle \langle \text{mml:mi mathvariant="bold-script" \rangle H \langle /mml:mi \rangle \langle /mml:math \rangle$ -LU factorization. Journal of Computational Science, 2019, 33, 20-33.	2.9	7
21	Hybrid Matrix Compression for High-Frequency Problems. SIAM Journal on Matrix Analysis and Applications, 2020, 41, 1704-1725.	1.4	5
22	Approximating Gaussian Processes with $\mathcal{H}^2$ -Matrices. Lecture Notes in Computer Science, 2007, , 42-53.	1.3	4
23	Computing the eigenvalues of symmetric $\mathcal{H}^2$ matrices by slicing the spectrum. Computing and Visualization in Science, 2013, 16, 271-282.	1.2	4
24	Low-rank approximation of integral operators by using the Green formula and quadrature. Numerical Algorithms, 2013, 64, 567-592.	1.9	3
25	Variable order, directional $\hat{\mathcal{A}}_2$ -matrices for Helmholtz problems with complex frequency. IMA Journal of Numerical Analysis, 2021, 41, 2896-2935.	2.9	2
26	A short overview of $\hat{\mathcal{A}}_2$ -matrices. Proceedings in Applied Mathematics and Mechanics, 2003, 2, 33-36.	0.2	1
27	Adaptive compression of large vectors. Mathematics of Computation, 2017, 87, 209-235.	2.1	1
28	Hierarchical matrix arithmetic with accumulated updates. Computing and Visualization in Science, 2019, 20, 71-84.	1.2	1
29	Fast Large-Scale Boundary Element Algorithms. Lecture Notes in Computer Science, 2021, , 60-79.	1.3	1
30	Adaptive Directional Compression of High-Frequency Helmholtz Boundary Element Matrices. Computational Methods in Applied Mathematics, 2021, .	0.8	1
31	$\mathcal{H}^2$ -Matrix Compression. Mathematics and Visualization, 2012, , 339-362.	0.6	1
32	SemiAutomatic Task Graph Construction for $\mathcal{H}$ -Matrix Arithmetic. SIAM Journal of Scientific Computing, 2022, 44, C77-C98.	2.8	1
33	Tensor Product Multigrid for Maxwell's Equation with Aligned Anisotropy. Computing (Vienna/New) Tj ETQq1 1 0.784314 rgBT /Overl	4.8	0
34	A Galerkin Approach for Solving Matrix Equations with Hierarchical Matrices. Proceedings in Applied Mathematics and Mechanics, 2013, 13, 405-406.	0.2	0
35	Computation of Electromagnetic Fields for a Humidity Sensor. , 2003, , 305-312.		0
36	Fast Evaluation of Eddy Current Integral Operators. , 2004, , 151-158.		0

#	ARTICLE	IF	CITATIONS
37	GCA- $H^2$ Matrix Compression for Electrostatic Simulations. Mathematics in Industry, 2020, , 211-223.	0.3	0
38	Dielectric Breakdown Prediction with GPU-Accelerated BEM. Mathematics in Industry, 2021, , 137-147.	0.3	0