

Michael Griebel

List of Publications by Year in descending order

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63
papers

3,646
citations

257357

24
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143943

57
g-index

69
all docs

69
docs citations

69
times ranked

2310
citing authors

#	ARTICLE	IF	CITATIONS
1	Sparse grids. Acta Numerica, 2004, 13, 147-269.	6.3	980
2	Numerical integration using sparse grids. Numerical Algorithms, 1998, 18, 209-232.	1.1	720
3	Molecular dynamics simulations of the elastic moduli of polymer-carbon nanotube composites. Computer Methods in Applied Mechanics and Engineering, 2004, 193, 1773-1788.	3.4	314
4	A Particle-Partition of Unity Method for the Solution of Elliptic, Parabolic, and Hyperbolic PDEs. SIAM Journal of Scientific Computing, 2000, 22, 853-890.	1.3	138
5	Adaptive sparse grid multilevel methods for elliptic PDEs based on finite differences. Computing (Vienna/New York), 1998, 61, 151-179.	3.2	127
6	A Particle-Partition of Unity Method-Part II: Efficient Cover Construction and Reliable Integration. SIAM Journal of Scientific Computing, 2002, 23, 1655-1682.	1.3	89
7	Dimension-wise integration of high-dimensional functions with applications to finance. Journal of Complexity, 2010, 26, 455-489.	0.7	86
8	An Adaptive Sparse Grid Semi-Lagrangian Scheme for First Order Hamilton-Jacobi Bellman Equations. Journal of Scientific Computing, 2013, 55, 575-605.	1.1	76
9	The nano-branched structure of cementitious calcium-silicate-hydrate gel. Journal of Materials Chemistry, 2011, 21, 4445.	6.7	69
10	Sparse grids for the Schrödinger equation. ESAIM: Mathematical Modelling and Numerical Analysis, 2007, 41, 215-247.	0.8	63
11	A Molecular Dynamic Study of Cementitious Calcium Silicate Hydrate (C ₂ S/H) Gels. Journal of the American Ceramic Society, 2007, 90, 070915225431002-???	1.9	63
12	A multi-GPU accelerated solver for the three-dimensional two-phase incompressible Navier-Stokes equations. Computer Science - Research and Development, 2010, 25, 65-73.	2.7	55
13	On the Computation of the Eigenproblems of Hydrogen and Helium in Strong Magnetic and Electric Fields with the Sparse Grid Combination Technique. Journal of Computational Physics, 2000, 165, 694-716.	1.9	54
14	Sparse grids. , 2004, , 147-270.		53
15	A Particle-Partition of Unity Method-Part III: A Multilevel Solver. SIAM Journal of Scientific Computing, 2002, 24, 377-409.	1.3	51
16	A general asset-liability management model for the efficient simulation of portfolios of life insurance policies. Insurance: Mathematics and Economics, 2008, 42, 704-716.	0.7	47
17	On a Constructive Proof of Kolmogorov's Superposition Theorem. Constructive Approximation, 2009, 30, 653-675.	1.8	40
18	THE COMBINATION TECHNIQUE FOR THE SPARSE GRID SOLUTION OF PDE'S ON MULTIPROCESSOR MACHINES. Parallel Processing Letters, 1992, 02, 61-70.	0.4	37

#	ARTICLE	IF	CITATIONS
19	The smoothing effect of the ANOVA decomposition. <i>Journal of Complexity</i> , 2010, 26, 523-551.	0.7	37
20	Classification with sparse grids using simplicial basis functions. <i>Intelligent Data Analysis</i> , 2002, 6, 483-502.	0.4	36
21	Flow simulation on moving boundary-fitted grids and application to fluid-structure interaction problems. <i>International Journal for Numerical Methods in Fluids</i> , 2006, 50, 437-468.	0.9	30
22	Sparse Grids for Higher Dimensional Problems. , 2006, , 106-161.		27
23	A Particle-Partition of Unity Method-Part IV: Parallelization. <i>Lecture Notes in Computational Science and Engineering</i> , 2003, , 161-192.	0.1	26
24	Algebraic multigrid methods for the solution of the Navier-Stokes equations in complicated geometries. <i>International Journal for Numerical Methods in Fluids</i> , 1998, 26, 281-301.	0.9	25
25	Molecular dynamics simulations of boron-nitride nanotubes embedded in amorphous Si-B-N. <i>Computational Materials Science</i> , 2007, 39, 502-517.	1.4	25
26	Approximation of bi-variate functions: singular value decomposition versus sparse grids. <i>IMA Journal of Numerical Analysis</i> , 2014, 34, 28-54.	1.5	25
27	On tensor product approximation of analytic functions. <i>Journal of Approximation Theory</i> , 2016, 207, 348-379.	0.5	24
28	Numerical simulation of bubble and droplet deformation by a level set approach with surface tension in three dimensions. <i>International Journal for Numerical Methods in Fluids</i> , 2010, 62, 963-993.	0.9	22
29	Massively Parallel Fluid Simulations on Amazon's HPC Cloud. , 2011, , .		22
30	Hyperbolic cross approximation in infinite dimensions. <i>Journal of Complexity</i> , 2016, 33, 55-88.	0.7	19
31	A Note on the Construction of L-Fold Sparse Tensor Product Spaces. <i>Constructive Approximation</i> , 2013, 38, 235-251.	1.8	17
32	Space-Time Approximation with Sparse Grids. <i>SIAM Journal of Scientific Computing</i> , 2006, 28, 701-727.	1.3	16
33	Adaptive Wavelet Solvers for the Unsteady Incompressible Navier-Stokes Equations. , 2000, , 67-118.		16
34	Coarse grid classification: a parallel coarsening scheme for algebraic multigrid methods. <i>Numerical Linear Algebra With Applications</i> , 2006, 13, 193-214.	0.9	15
35	A sparse grid based method for generative dimensionality reduction of high-dimensional data. <i>Journal of Computational Physics</i> , 2016, 309, 1-17.	1.9	15
36	Principal manifold learning by sparse grids. <i>Computing (Vienna/New York)</i> , 2009, 85, 267-299.	3.2	13

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37	Fast Approximation of the Discrete Gauss Transform in Higher Dimensions. Journal of Scientific Computing, 2013, 55, 149-172.	1.1	12
38	Efficient deterministic numerical simulation of stochastic asset-liability management models in life insurance. Insurance: Mathematics and Economics, 2009, 44, 434-446.	0.7	11
39	On the Convergence of the Combination Technique. Lecture Notes in Computational Science and Engineering, 2014, , 55-74.	0.1	9
40	Adaptive Sparse Grids for Hyperbolic Conservation Laws. , 1999, , 411-422.		8
41	A Particle-Partition of Unity Method Part VI: A p-robust Multilevel Solver. , 2005, , 71-92.		7
42	Singular value decomposition versus sparse grids: refined complexity estimates. IMA Journal of Numerical Analysis, 2019, 39, 1652-1671.	1.5	7
43	Analysis of Tensor Approximation Schemes for Continuous Functions. Foundations of Computational Mathematics, 2023, 23, 219-240.	1.5	7
44	Parallel Multigrid in an Adaptive PDE Solver Based on Hashing. Advances in Parallel Computing, 1998, 12, 589-599.	0.3	6
45	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.	1.1	6
46	The BGY3dM model for the approximation of solvent densities. Journal of Chemical Physics, 2008, 129, 174511.	1.2	5
47	Toward the Use of Integral Radar Volume Descriptors for Quantitative Areal Precipitation Estimation: Results from Pseudoradar Observations. Journal of Atmospheric and Oceanic Technology, 2009, 26, 1798-1813.	0.5	5
48	Error Estimates for Multivariate Regression on Discretized Function Spaces. SIAM Journal on Numerical Analysis, 2017, 55, 1843-1866.	1.1	5
49	Dimension-Adaptive Sparse Grid Quadrature for Integrals with Boundary Singularities. Lecture Notes in Computational Science and Engineering, 2014, , 109-136.	0.1	5
50	An Adaptive Sparse Grid Approach for Time Series Prediction. Lecture Notes in Computational Science and Engineering, 2012, , 1-30.	0.1	5
51	Intraday Foreign Exchange Rate Forecasting Using Sparse Grids. Lecture Notes in Computational Science and Engineering, 2012, , 81-105.	0.1	5
52	Optimal scaling parameters for sparse grid discretizations. Numerical Linear Algebra With Applications, 2015, 22, 76-100.	0.9	4
53	Stable splittings of Hilbert spaces of functions of infinitely many variables. Journal of Complexity, 2017, 41, 126-151.	0.7	4
54	An Adaptive Multiscale Approach for Electronic Structure Methods. Multiscale Modeling and Simulation, 2018, 16, 752-776.	0.6	3

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55	Multiscale Methods for the Simulation of Turbulent Flows. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2003, , 203-214.	0.2	3
56	Schwarz Iterative Methods: Infinite Space Splittings. Constructive Approximation, 2016, 44, 121-139.	1.8	2
57	Stochastic Subspace Correction in Hilbert Space. Constructive Approximation, 2018, 48, 501-521.	1.8	2
58	EXAHD: A Massively Parallel Fault Tolerant Sparse Grid Approach for High-Dimensional Turbulent Plasma Simulations. Lecture Notes in Computational Science and Engineering, 2020, , 301-329.	0.1	2
59	Photorealistic visualization and fluid animation: coupling of Maya with a two-phase Navier-Stokes fluid solver. Computing and Visualization in Science, 2011, 14, 371-383.	1.2	1
60	Data-Mining für die Angebotsoptimierung im Handel. , 2009, , 111-123.		1
61	Data Mining for the Category Management in the Retail Market. , 2010, , 81-92.		1
62	Generalized Sparse Grid Interpolation Based on the Fast Discrete Fourier Transform. Lecture Notes in Computational Science and Engineering, 2021, , 53-68.	0.1	1
63	Tensor Product Multiscale Many-Particle Spaces with Finite-Order Weights for the Electronic Schrödinger Equation. , 2010, , 237-253.		0