Wolfgang Bangerth

List of Publications by Year
in descending order

56 papers	3,092 citations	236833 25 h-index	206029 48 g-index
56 all docs	56 docs citations	56 times ranked	2196 citing authors

#	Article	IF	Citations
1	Adaptive Finite Element Methods for Differential Equations. , 2003, , .		416
2	High accuracy mantle convection simulation through modern numerical methods. Geophysical Journal International, 2012, 191, 12-29.	1.0	263
3	On optimization algorithms for the reservoir oil well placement problem. Computational Geosciences, 2006, 10, 303-319.	1.2	229
4	High accuracy mantle convection simulation through modern numerical methods â€" II: realistic models and problems. Geophysical Journal International, 2017, 210, 833-851.	1.0	187
5	Adaptive finite element based tomography for fluorescence optical imaging in tissue. Optics Express, 2004, 12, 5402.	1.7	178
6	Algorithms and data structures for massively parallel generic adaptive finite element codes. ACM Transactions on Mathematical Software, 2011, 38, 1-28.	1.6	135
7	The deal.II Library, Version 8.4. Journal of Numerical Mathematics, 2016, 24, .	1.8	131
8	The deal.II library, Version 9.0. Journal of Numerical Mathematics, 2018, 26, 173-183.	1.8	131
9	The deal.II finite element library: Design, features, and insights. Computers and Mathematics With Applications, 2021, 81, 407-422.	1.4	125
10	The deal.II library, Version 9.2. Journal of Numerical Mathematics, 2020, 28, 131-146.	1.8	114
11	The deal.II library, version 8.5. Journal of Numerical Mathematics, 2017, 25, .	1.8	104
12	The deal.II library, Version 9.1. Journal of Numerical Mathematics, 2019, 27, 203-213.	1.8	102
13	Non-contact fluorescence optical tomography with scanning patterned illumination. Optics Express, 2006, 14, 6516.	1.7	95
14	The deal.II library, Version 9.3. Journal of Numerical Mathematics, 2021, 29, 171-186.	1.8	92
15	Adaptive finite element methods for the solution of inverse problems in optical tomography. Inverse Problems, 2008, 24, 034011.	1.0	77
16	The deal.II library, Version 9.4. Journal of Numerical Mathematics, 2022, 30, 231-246.	1.8	60
17	Three-dimensional h-adaptivity for the multigroup neutron diffusion equations. Progress in Nuclear Energy, 2009, 51, 543-555.	1.3	45
18	<i>WorkStream</i> -- A Design Pattern for Multicore-Enabled Finite Element Computations. ACM Transactions on Mathematical Software, 2017, 43, 1-29.	1.6	45

#	Article	IF	Citations
19	Fully adaptive FEM based fluorescence optical tomography from time-dependent measurements with area illumination and detection. Medical Physics, 2006, 33, 1299-1310.	1.6	44
20	ADAPTIVE FINITE ELEMENT TECHNIQUES FOR THE ACOUSTIC WAVE EQUATION. Journal of Computational Acoustics, 2001, 09, 575-591.	1.0	38
21	An Autonomic Reservoir Framework for the Stochastic Optimization of Well Placement. Cluster Computing, 2005, 8, 255-269.	3.5	38
22	Estimating Parameters in Physical Models through Bayesian Inversion: A Complete Example. SIAM Review, 2013, 55, 149-167.	4.2	34
23	Flexible and Scalable Particle‐in‐Cell Methods With Adaptive Mesh Refinement for Geodynamic Computations. Geochemistry, Geophysics, Geosystems, 2018, 19, 3596-3604.	1.0	34
24	A Framework for the Adaptive Finite Element Solution of Large-Scale Inverse Problems. SIAM Journal of Scientific Computing, 2008, 30, 2965-2989.	1.3	32
25	Multi-level adaptive simulation of transient two-phase flow in heterogeneous porous media. Computers and Fluids, 2010, 39, 1585-1596.	1.3	32
26	Plane-wave fluorescence tomography with adaptive finite elements. Optics Letters, 2006, 31, 193.	1.7	30
27	Application of Grid-enabled technologies for solving optimization problems in data-driven reservoir studies. Future Generation Computer Systems, 2005, 21, 19-26.	4.9	25
28	Goal-Oriented h-Adaptivity for the Multigroup SPN Equations. Nuclear Science and Engineering, 2010, 165, 305-319.	0.5	22
29	What makes computational open source software libraries successful?. Computational Science & Discovery, 2013, 6, 015010.	1.5	21
30	Efficient and practical Newton solvers for non-linear Stokes systems in geodynamic problems. Geophysical Journal International, 2019, 218, 873-894.	1.0	21
31	Statistics of Parameter Estimates: A Concrete Example. SIAM Review, 2015, 57, 131-149.	4.2	19
32	Modelling error and constitutive relations in simulation of flow and transport. International Journal for Numerical Methods in Fluids, 2004, 46, 1211-1236.	0.9	17
33	Analysis of parameter sensitivity and experimental design for a class of nonlinear partial differential equations. International Journal for Numerical Methods in Fluids, 2005, 48, 583-605.	0.9	15
34	Reconstructions in ultrasound modulated optical tomography. Journal of Inverse and Ill-Posed Problems, 2011, 19, 801-823.	0.5	13
35	Efficient numerical methods for the large‐scale, parallel solution of elastoplastic contact problems. International Journal for Numerical Methods in Engineering, 2016, 105, 416-439.	1.5	11
36	Evaluating the accuracy of hybrid finite element/particle-in-cell methods for modelling incompressible Stokes flow. Geophysical Journal International, 2019, 219, 1915-1938.	1.0	11

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37	On formulations of compressible mantle convection. Geophysical Journal International, 2020, 221, 1264-1280.	1.0	11
38	Propagating Geometry Information to Finite Element Computations. ACM Transactions on Mathematical Software, 2021, 47, 1-30.	1.6	11
39	An h-Adaptive Operator Splitting Method for Two-Phase Flow in 3D Heterogeneous Porous Media. SIAM Journal of Scientific Computing, 2013, 35, B149-B175.	1.3	10
40	Towards Dynamic Data-Driven Optimization of Oil Well Placement. Lecture Notes in Computer Science, 2005, , 656-663.	1.0	10
41	Reflective Writing Supports Metacognition and Self-regulation in Graduate Computational Science and Engineering. Computers and Education Open, 2022, 3, 100085.	2.6	10
42	Fourth Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE4). Journal of Open Research Software, 2018, 6, 10.	2.7	9
43	On Orienting Edges of Unstructured Two- and Three-Dimensional Meshes. ACM Transactions on Mathematical Software, 2018, 44, 1-22.	1.6	8
44	On the choice of finite element for applications in geodynamics. Solid Earth, 2022, 13, 229-249.	1.2	8
45	Teaching High Performance Computing: Lessons from a Flipped Classroom, Project-Based Course on Finite Element Methods. , 2014, , .		6
46	Estimating reaction parameters in mechanismâ€enabled population balance models of nanoparticle size distributions: A Bayesian inverse problem approach. Journal of Computational Chemistry, 2022, 43, 43-56.	1.5	6
47	Finite element method for time dependent scattering: nonreflecting boundary condition, adaptivity, and energy decay. Computer Methods in Applied Mechanics and Engineering, 2004, 193, 2453-2482.	3.4	3
48	MOLECULAR TOMOGRAPHIC IMAGING OF LYMPH NODES WITH NIR FLUORESCENCE. , 2007, , .		3
49	On Hanging Node Constraints for Nonconforming Finite Elements using the Douglas--Santos--Sheen--Ye Element as an Example. SIAM Journal on Numerical Analysis, 2017, 55, 1719-1739.	1.1	3
50	Adaptive finite element methods for increased resolution in fluorescence optical tomography. , 2005, 5693, 318.		2
51	Adaptive finite element methods for nonlinear inverse problems. , 2009, , .		2
52	Massively Parallel Finite Element Programming. Lecture Notes in Computer Science, 2010, , 122-131.	1.0	2
53	INVERSE BIOMEDICAL IMAGING USING SEPARATELY ADAPTED MESHES FOR PARAMETERS AND FORWARD MODEL VARIABLES. , 2007, , .		1
54	Residual-based a posteriori error estimation for hp-adaptive finite element methods for the Stokes equations. Journal of Numerical Mathematics, 2019, 27, 237-252.	1.8	1

#	ARTICLE	IF	CITATIONS
55	Experimental fluorescence optical tomography using adaptive finite elements and planar illumination with modulated excitation light. , 2005, , .		0
56	Multiple-experiment and multiple-physics approaches for fluorescence guided molecular tomographic imaging. , 2006, , .		0