Christophe Geuzaine

List of Publications by Year
in descending order

85 papers	**5,992** citations	566801 **15** h-index	79541 **73** g-index
88 all docs	**88** docs citations	**88** times ranked	**6410** citing authors

#	Article	IF	Citations
1	Multidirectional sweeping preconditioners with non-overlapping checkerboard domain decomposition for Helmholtz problems. Journal of Computational Physics, 2022, 453, 110887.	1.9	5
2	Construction and Numerical Assessment of Local Absorbing Boundary Conditions for Heterogeneous Time-Harmonic Acoustic Problems. SIAM Journal on Applied Mathematics, 2022, 82, 476-501.	0.8	4
3	A MultiHarmonic Finite Element Method for Scattering Problems with Small-Amplitude Boundary Deformations. SIAM Journal of Scientific Computing, 2022, 44, B197-B223.	1.3	1
4	Shamo: A Tool for Electromagnetic Modeling, Simulation and Sensitivity Analysis of the Head. Neuroinformatics, 2022, , 1.	1.5	3
5	A non-overlapping domain decomposition method with perfectly matched layer transmission conditions for the Helmholtz equation. Computer Methods in Applied Mechanics and Engineering, 2022, 395, 115006.	3.4	7
6	A Well-Conditioned Weak Coupling of Boundary Element and High-Order Finite Element Methods for Time-Harmonic Electromagnetic Scattering by Inhomogeneous Objects. SIAM Journal of Scientific Computing, 2022, 44, B640-B667.	1.3	1
7	Adjoint state method for time-harmonic scattering problems with boundary perturbations. Journal of Computational Physics, 2021, 428, 109981.	1.9	0
8	Stable Perfectly Matched Layers with Lorentz transformation for the convected Helmholtz equation. Journal of Computational Physics, 2021, 433, 110180.	1.9	9
9	On the Stability of Mixed Finite-Element Formulations for High-Temperature Superconductors. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-12.	1.1	10
10	Finite-Element Formulations for Systems With High-Temperature Superconductors. IEEE Transactions on Applied Superconductivity, 2020, 30, 1-13.	1.1	24
11	Corner treatments for high-order local absorbing boundary conditions in high-frequency acoustic scattering. Journal of Computational Physics, 2020, 401, 109029.	1.9	31
12	A non-overlapping domain decomposition method with high-order transmission conditions and cross-point treatment for Helmholtz problems. Computer Methods in Applied Mechanics and Engineering, 2020, 368, 113162.	3.4	16
13	Perfectly matched layer for computing the dynamics of nonlinear Schrödinger equations by pseudospectral methods. Application to rotating Bose-Einstein condensates. Communications in Nonlinear Science and Numerical Simulation, 2020, 90, 105406.	1.7	17
14	A non-overlapping Schwarz domain decomposition method with high-order finite elements for flow acoustics. Computer Methods in Applied Mechanics and Engineering, 2020, 369, 113223.	3.4	6
15	Optimized weak coupling of boundary element and finite element methods for acoustic scattering. Journal of Computational Physics, 2020, 421, 109737.	1.9	8
16	Non-linear eigenvalue problems with GetDP and SLEPc: Eigenmode computations of frequency-dispersive photonic open structures. Computer Physics Communications, 2020, 257, 107509.	3.0	11
17	Co‐Designed Exposure Protocol in the Study of Idiopathic Environmental Intolerance Attributed to Electromagnetic Fields. Bioelectromagnetics, 2020, 41, 425-437.	0.9	6
18	Automatic surface mesh generation for discrete models – A complete and automatic pipeline based on reparametrization. Journal of Computational Physics, 2020, 417, 109575.	1.9	5

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19	Using edge elements for modeling of 3-D magnetodynamic problem via a subproblem method. Science and Technology Development Journal, 2020, 23, 439-445.	0.0	3
20	Two-way coupling of Thin Shell Finite Element Magnetic Models via an Iterative Subproblem Method. , 2019, , .		0
21	Test-case transformer for the energy-based vector hysteresis model. , 2019, , .		1
22	Combination of topology optimization and Lie derivative-based shape optimization for electro-mechanical design. Structural and Multidisciplinary Optimization, 2019, 59, 1723-1731.	1.7	13
23	Steady-state, nonlinear analysis of large arrays of electrically actuated micromembranes vibrating in a fluid. Engineering With Computers, 2018, 34, 591-602.	3.5	5
24	Improved sweeping preconditioners for domain decomposition algorithms applied to time-harmonic Helmholtz and Maxwell problems. ESAIM Proceedings and Surveys, 2018, 61, 93-111.	0.5	7
25	Design sensitivity analysis for shape optimization based on the Lie derivative. Computer Methods in Applied Mechanics and Engineering, 2017, 317, 702-722.	3.4	9
26	A–$\mathbf{I}$ formulation of a mathematical model for the induction hardening process with a nonlinear law for the magnetic field. Computer Methods in Applied Mechanics and Engineering, 2017, 321, 294-315.	3.4	15
27	Using a Jiles–Atherton vector hysteresis model for isotropic magnetic materials with the finite element method, Newton–Raphson method, and relaxation procedure. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2017, 30, e2189.	1.2	14
28	Perfectly matched layers for convex truncated domains with discontinuous Galerkin time domain simulations. Computers and Mathematics With Applications, 2017, 73, 684-700.	1.4	9
29	Computing cross fields A PDE approach based on the Ginzburg-Landau theory. Procedia Engineering, 2017, 203, 219-231.	1.2	14
30	MEASUREMENT METHODOLOGIES FOR REDUCING ERRORS IN THE ASSESSMENT OF EMF BY EXPOSIMETER. Progress in Electromagnetics Research B, 2017, 78, 31-46.	0.7	4
31	Using a vector Jiles-Atherton static model to simulate the effect of hysteresis on the operation of fast-acting linear actuators. International Journal of Applied Electromagnetics and Mechanics, 2016, 52, 547-554.	0.3	1
32	Relaxation methods for co-simulation of finite element and circuit solvers. , 2016, , .		0
33	Surface impedance boundary condition with circuit coupling for the 3D finite element modeling of wireless power transfer. , 2016, , .		1
34	Nonlinear reduced order model of a 3-phase transformer for electric network simulator coupling. , 2016, , .		0
35	Design Sensitivity Analysis for Shape Optimization of Nonlinear Magnetostatic Systems. IEEE Transactions on Magnetics, 2016, 52, 1-4.	1.2	12
36	Co-simulation of of finite element and circuit solvers using optimized waveform relaxation. , 2016, , .		3

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37	Comparison between differential and variational forms of an energy-based hysteresis model. , 2016, , .		0
38	Comparison of Nonlinear Domain Decomposition Schemes for Coupled Electromechanical Problems. IEEE Transactions on Magnetics, 2016, 52, 1-4.	1.2	5
39	Reduced-Order Model Accounting for High-Frequency Effects in Power Electronic Components. IEEE Transactions on Magnetics, 2016, 52, 1-4.	1.2	10
40	Domain Decomposition Methods for Time-Harmonic Electromagnetic Waves With High-Order Whitney Forms. IEEE Transactions on Magnetics, 2016, 52, 1-4.	1.2	8
41	Nonlinear Interpolation on Manifold of Reduced-Order Models in Magnetodynamic Problems. IEEE Transactions on Magnetics, 2016, 52, 1-4.	1.2	16
42	Multiharmonic resolution of nonlinearly coupled electrovibromechanical systems using domain decomposition. , 2016, , .		0
43	A Two-Level Multithreaded Delaunay Kernel. Procedia Engineering, 2015, 124, 6-17.	1.2	9
44	Subproblem Finite-Element Refinement of Homogenized Dielectric Layers in Wound Inductors for Accurate Local Stresses Computation. IEEE Transactions on Magnetics, 2015, 51, 1-4.	1.2	1
45	Refinement of Homogenized Magnetodynamic Models of Wound Inductors Using Finite-Element Subproblems. IEEE Transactions on Magnetics, 2015, 51, 1-4.	1.2	3
46	Subproblem Finite-Element Refinement of Inductors From Wire to Static and Dynamic Volume Models. IEEE Transactions on Magnetics, 2015, 51, 1-4.	1.2	6
47	Sequential decision-making approach for quadrangular mesh generation. Engineering With Computers, 2015, 31, 729-735.	3.5	1
48	Anisotropic and feature sensitive triangular remeshing using normal lifting. Journal of Computational and Applied Mathematics, 2015, 289, 225-240.	1.1	9
49	Efficient finite element assembly of high order Whitney forms. IET Science, Measurement and Technology, 2015, 9, 204-210.	0.9	5
50	Pragmatic two‐step homogenisation technique for ferromagnetic laminated cores. IET Science, Measurement and Technology, 2015, 9, 152-159.	0.9	11
51	Progressive eddy current modeling via a finite element subproblem method. International Journal of Applied Electromagnetics and Mechanics, 2014, 46, 341-348.	0.3	1
52	Analysis of transient scattering problems using a discontinuous Galerkin method: application to the shielding effectiveness of enclosures with heterogeneous walls. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2014, 27, 626-635.	1.2	2
53	Optimal parametrizations for surface remeshing. Engineering With Computers, 2014, 30, 383-402.	3.5	19
54	Perfect Conductor and Impedance Boundary Condition Corrections via a Finite Element Subproblem Method. IEEE Transactions on Magnetics, 2014, 50, 29-32.	1.2	6

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55	Nonlinear Computational Homogenization Method for the Evaluation of Eddy Currents in Soft Magnetic Composites. IEEE Transactions on Magnetics, 2014, 50, 61-64.	1.2	19
56	Iron Loss Calculation in Steel Laminations at High Frequencies. IEEE Transactions on Magnetics, 2014, 50, 333-336.	1.2	28
57	A 3-D Semi-Implicit Method for Computing the Current Density in Bulk Superconductors. IEEE Transactions on Magnetics, 2014, 50, 377-380.	1.2	20
58	A finite-element reciprocity solution for EEG forward modeling with realistic individual head models. NeuroImage, 2014, 103, 542-551.	2.1	30
59	Optimizing the Geometrical Accuracy of 2D Curvilinear Meshes. Procedia Engineering, 2014, 82, 228-239.	1.2	13
60	Robust untangling of curvilinear meshes. Journal of Computational Physics, 2013, 254, 8-26.	1.9	125
61	A primal/dual approach for the accurate evaluation of the electromechanical coupling in MEMS. Finite Elements in Analysis and Design, 2012, 49, 19-27.	1.7	9
62	Stochastic Uncertainty Quantification of Eddy Currents in the Human Body by Polynomial Chaos Decomposition. IEEE Transactions on Magnetics, 2012, 48, 451-454.	1.2	15
63	Time-Domain Surface Impedance Boundary Conditions Enhanced by Coarse Volume Finite-Element Discretisation. IEEE Transactions on Magnetics, 2012, 48, 631-634.	1.2	7
64	Computation of Induced Fields Into the Human Body by Dual Finite Element Formulations. IEEE Transactions on Magnetics, 2012, 48, 783-786.	1.2	11
65	A Finite Element Subproblem Method for Position Change Conductor Systems. IEEE Transactions on Magnetics, 2012, 48, 403-406.	1.2	8
66	Subproblem Approach for Thin Shell Dual Finite Element Formulations. IEEE Transactions on Magnetics, 2012, 48, 407-410.	1.2	15
67	Correction of Thin Shell Finite Element Magnetic Models via a Subproblem Method. IEEE Transactions on Magnetics, 2011, 47, 1158-1161.	1.2	10
68	A Model Reduction Algorithm for Solving Multiple Scattering Problems Using Iterative Methods. IEEE Transactions on Magnetics, 2011, 47, 1470-1473.	1.2	13
69	Transformation Optics, Generalized Cloaking and Superlenses. IEEE Transactions on Magnetics, 2010, 46, 2975-2981.	1.2	15
70	Surface-Impedance Boundary Conditions in Dual Time-Domain Finite-Element Formulations. IEEE Transactions on Magnetics, 2010, 46, 3524-3531.	1.2	8
71	An Amplitude Finite Element Formulation for Multiple-Scattering by a Collection of Convex Obstacles. IEEE Transactions on Magnetics, 2010, 46, 2963-2966.	1.2	12
72	Finite Element Magnetic Models via a Coupling of Subproblems of Lower Dimensions. IEEE Transactions on Magnetics, 2010, 46, 2827-2830.	1.2	16

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73	Stochastic Uncertainty Quantification of the Conductivity in EEG Source Analysis by Using Polynomial Chaos Decomposition. IEEE Transactions on Magnetics, 2010, 46, 3457-3460.	1.2	16
74	Correction of thin shell finite element magnetic models via a subproblem method. , 2010, , .		2
75	Refinement of inductor models via a subproblem finite element method. , 2010, , .		0
76	Nonlinear Time-Domain Finite-Element Modeling of Thin Electromagnetic Shells. IEEE Transactions on Magnetics, 2009, 45, 976-979.	1.2	6
77	Gmsh: A 3â€D finite element mesh generator with builtâ€in preâ€and postâ€processing facilities. International Journal for Numerical Methods in Engineering, 2009, 79, 1309-1331.	1.5	4,970
78	Phase reduction models for improving the accuracy of the finite element solution of time-harmonic scattering problems I: General approach and low-order models. Journal of Computational Physics, 2009, 228, 3114-3136.	1.9	9
79	Multiscale mesh generation on the sphere. Ocean Dynamics, 2008, 58, 461-473.	0.9	55
80	An Amplitude Formulation to Reduce the Pollution Error in the Finite Element Solution of Time-Harmonic Scattering Problems. IEEE Transactions on Magnetics, 2008, 44, 782-785.	1.2	11
81	Time-Domain Finite-Element Modeling of Thin Electromagnetic Shells. IEEE Transactions on Magnetics, 2008, 44, 742-745.	1.2	15
82	Application of an electromagnetic modeling method for railway grounding systems subjected to lightning strikes. , 2008, , .		0
83	Efficient visualization of high-order finite elements. International Journal for Numerical Methods in Engineering, 2007, 69, 750-771.	1.5	43
84	GetDP: a general finiteâ€element solver for the de Rham complex. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1010603-1010604.	0.2	51
85	Modelling of electromagnetic waves in periodic media with finite elements. Journal of Computational and Applied Mathematics, 2004, 168, 321-329.	1.1	53