

Carsten Carstensen

List of Publications by Year in descending order

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140
papers

3,896
citations

126858

33
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143943

57
g-index

146
all docs

146
docs citations

146
times ranked

1072
citing authors

#	ARTICLE	IF	CITATIONS
1	Non-convex potentials and microstructures in finite-strain plasticity. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2002, 458, 299-317.	1.0	296
2	A posteriori error estimate for the mixed finite element method. Mathematics of Computation, 1997, 66, 465-477.	1.1	213
3	Edge Residuals Dominate A Posteriori Error Estimates for Low Order Finite Element Methods. SIAM Journal on Numerical Analysis, 1999, 36, 1571-1587.	1.1	157
4	Remarks around 50 lines of Matlab: short finite element implementation. Numerical Algorithms, 1999, 20, 117-137.	1.1	148
5	Each averaging technique yields reliable a posteriori error control in FEM on unstructured grids. Part I: Low order conforming, nonconforming, and mixed FEM. Mathematics of Computation, 2002, 71, 945-969.	1.1	141
6	Quasi-Interpolation and A Posteriori Error Analysis in Finite Element Methods. ESAIM: Mathematical Modelling and Numerical Analysis, 1999, 33, 1187-1202.	0.8	112
7	Fully Reliable Localized Error Control in the FEM. SIAM Journal of Scientific Computing, 1999, 21, 1465-1484.	1.3	85
8	Numerical solution of the scalar double-well problem allowing microstructure. Mathematics of Computation, 1997, 66, 997-1027.	1.1	83
9	An a posteriori error estimate for a first-kind integral equation. Mathematics of Computation, 1997, 66, 139-156.	1.1	78
10	A posteriori error estimates for nonconforming finite element methods. Numerische Mathematik, 2002, 92, 233-256.	0.9	73
11	Convergence analysis of an adaptive nonconforming finite element method. Numerische Mathematik, 2006, 103, 251-266.	0.9	72
12	A Posteriori Error Control for DPG Methods. SIAM Journal on Numerical Analysis, 2014, 52, 1335-1353.	1.1	69
13	Averaging technique for FE a posteriori error control in elasticity. Part I: Conforming FEM. Computer Methods in Applied Mechanics and Engineering, 2001, 190, 2483-2498.	3.4	68
14	Convergence analysis of a conforming adaptive finite element method for an obstacle problem. Numerische Mathematik, 2007, 107, 455-471.	0.9	68
15	Error reduction and convergence for an adaptive mixed finite element method. Mathematics of Computation, 2006, 75, 1033-1043.	1.1	67
16	Adaptive numerical analysis in primal elastoplasticity with hardening. Computer Methods in Applied Mechanics and Engineering, 1999, 171, 175-204.	3.4	66
17	Each averaging technique yields reliable a posteriori error control in FEM on unstructured grids. Part II: Higher order FEM. Mathematics of Computation, 2002, 71, 971-994.	1.1	63
18	Guaranteed lower bounds for eigenvalues. Mathematics of Computation, 2014, 83, 2605-2629.	1.1	63

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19	Framework for the A Posteriori Error Analysis of Nonconforming Finite Elements. SIAM Journal on Numerical Analysis, 2007, 45, 68-82.	1.1	59
20	Guaranteed lower eigenvalue bounds for the biharmonic equation. Numerische Mathematik, 2014, 126, 33-51.	0.9	58
21	Adaptive Boundary Element Methods for Some First Kind Integral Equations. SIAM Journal on Numerical Analysis, 1996, 33, 2166-2183.	1.1	55
22	A posteriori error control in low-order finite element discretisations of incompressible stationary flow problems. Mathematics of Computation, 2000, 70, 1353-1382.	1.1	55
23	Adaptive coupling of boundary elements and finite elements. ESAIM: Mathematical Modelling and Numerical Analysis, 1995, 29, 779-817.	0.8	53
24	A posteriori error estimates for boundary element methods. Mathematics of Computation, 1995, 64, 483-483.	1.1	50
25	An Adaptive Mesh-Refining Algorithm Allowing for an H^1 Stable L^2 Projection onto Courant Finite Element Spaces. Constructive Approximation, 2004, 20, 549-564.	1.8	47
26	Local Stress Regularity in Scalar Nonconvex Variational Problems. SIAM Journal on Mathematical Analysis, 2002, 34, 495-509.	0.9	45
27	A Priori and A Posteriori Pseudostress-velocity Mixed Finite Element Error Analysis for the Stokes Problem. SIAM Journal on Numerical Analysis, 2011, 49, 2501-2523.	1.1	44
28	Numerical analysis of the primal problem of elastoplasticity with hardening. Numerische Mathematik, 1999, 82, 577-597.	0.9	42
29	Residual-based a posteriori error estimate for hypersingular equation on surfaces. Numerische Mathematik, 2004, 97, 397-425.	0.9	40
30	A unifying theory of a posteriori error control for discontinuous Galerkin FEM. Numerische Mathematik, 2009, 112, 363-379.	0.9	39
31	Efficiency of a posteriori BEM-error estimates for first-kind integral equations on quasi-uniform meshes. Mathematics of Computation, 1996, 65, 69-85.	1.1	36
32	Explicit Error Estimates for Courant, Crouzeix-Raviart and Raviart-Thomas Finite Element Methods. Journal of Computational Mathematics, 2012, 30, 337-353.	0.2	36
33	Numerical Analysis of Time-Depending Primal Elastoplasticity with Hardening. SIAM Journal on Numerical Analysis, 2000, 37, 1271-1294.	1.1	34
34	An oscillation-free adaptive FEM for symmetric eigenvalue problems. Numerische Mathematik, 2011, 118, 401-427.	0.9	34
35	Interface problem in holonomic elastoplasticity. Mathematical Methods in the Applied Sciences, 1993, 16, 819-835.	1.2	32
36	Numerical Analysis of Compatible Phase Transitions in Elastic Solids. SIAM Journal on Numerical Analysis, 2000, 37, 2061-2081.	1.1	32

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37	Averaging Techniques for the Effective Numerical Solution of Symm's Integral Equation of the First Kind. <i>SIAM Journal of Scientific Computing</i> , 2006, 27, 1226-1260.	1.3	32
38	An Adaptive Finite Element Eigenvalue Solver of Asymptotic Quasi-Optimal Computational Complexity. <i>SIAM Journal on Numerical Analysis</i> , 2012, 50, 1029-1057.	1.1	31
39	FEM and BEM Coupling for a Nonlinear Transmission Problem with Signorini Contact. <i>SIAM Journal on Numerical Analysis</i> , 1997, 34, 1845-1864.	1.1	29
40	Adaptive nonconforming Crouzeix-Raviart FEM for eigenvalue problems. <i>Mathematics of Computation</i> , 2014, 84, 1061-1087.	1.1	29
41	Domain decomposition for a non-smooth convex minimization problem and its application to plasticity. <i>Numerical Linear Algebra With Applications</i> , 1997, 4, 177-190.	0.9	28
42	Mixed analytical–numerical relaxation in finite single-slip crystal plasticity. <i>Continuum Mechanics and Thermodynamics</i> , 2008, 20, 275-301.	1.4	28
43	Optimal adaptive nonconforming FEM for the Stokes problem. <i>Numerische Mathematik</i> , 2013, 123, 291-308.	0.9	28
44	Convergence and Optimality of Adaptive Least Squares Finite Element Methods. <i>SIAM Journal on Numerical Analysis</i> , 2015, 53, 43-62.	1.1	28
45	Symmetric coupling of boundary elements and Raviart-Thomas-type mixed finite elements in elastostatics. <i>Numerische Mathematik</i> , 1996, 75, 153-174.	0.9	27
46	Averaging techniques for reliable a posteriori FE-error control in elastoplasticity with hardening. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2003, 192, 1435-1450.	3.4	27
47	A Posteriori Finite Element Error Control for the P-Laplace Problem. <i>SIAM Journal of Scientific Computing</i> , 2003, 25, 792-814.	1.3	27
48	An optimal adaptive mixed finite element method. <i>Mathematics of Computation</i> , 2011, 80, 649-649.	1.1	27
49	Numerical Analysis of a Relaxed Variational Model of Hysteresis in Two-Phase Solids. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 2001, 35, 865-878.	0.8	24
50	Numerical analysis of relaxed micromagnetics by penalised finite elements. <i>Numerische Mathematik</i> , 2001, 90, 65-99.	0.9	24
51	Averaging technique for FE a posteriori error control in elasticity. Part II: $\hat{\nu}$ -independent estimates. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2001, 190, 4663-4675.	3.4	24
52	Residual-Based A Posteriori Error Estimate for a Nonconforming Reissner–Mindlin Plate Finite Element. <i>SIAM Journal on Numerical Analysis</i> , 2002, 39, 2034-2044.	1.1	24
53	A discrete Helmholtz decomposition with Morley finite element functions and the optimality of adaptive finite element schemes. <i>Computers and Mathematics With Applications</i> , 2014, 68, 2167-2181.	1.4	24
54	A posterior error estimates for hp–boundary element methods. <i>Applicable Analysis</i> , 1996, 61, 233-253.	0.6	21

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55	Quasi-optimal Adaptive Pseudostress Approximation of the Stokes Equations. SIAM Journal on Numerical Analysis, 2013, 51, 1715-1734.	1.1	21
56	Discontinuous Galerkin time discretization in elastoplasticity: motivation, numerical algorithms, and applications. Computer Methods in Applied Mechanics and Engineering, 2002, 191, 4949-4968.	3.4	20
57	Title is missing!. Advances in Computational Mathematics, 2001, 15, 79-106.	0.8	19
58	Averaging Techniques for the A Posteriori BEM Error Control for a Hypersingular Integral Equation in Two Dimensions. SIAM Journal of Scientific Computing, 2007, 29, 782-810.	1.3	19
59	Coupling of FEM and BEM for Interface Problems in Viscoplasticity and Plasticity with Hardening. SIAM Journal on Numerical Analysis, 1996, 33, 171-207.	1.1	18
60	An a priori error estimate for finite element discretizations in nonlinear elasticity for polyconvex materials under small loads. Numerische Mathematik, 2004, 97, 67-80.	0.9	18
61	A quasi-static boundary value problem in multi-surface elastoplasticity: Part 1 "Analysis. Mathematical Methods in the Applied Sciences, 2004, 27, 1697-1710.	1.2	17
62	Residual-based a posteriori error estimate for a mixed Reissner-Mindlin plate finite element method. Numerische Mathematik, 2006, 103, 225-250.	0.9	17
63	A posteriori FE error control for p-Laplacian by gradient recovery in quasi-norm. Mathematics of Computation, 2006, 75, 1599-1616.	1.1	16
64	A posteriori error analysis for elliptic pdes on domains with complicated structures. Numerische Mathematik, 2004, 96, 691-721.	0.9	15
65	Uniform convergence and a posteriori error estimation for assumed stress hybrid finite element methods. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 2421-2433.	3.4	15
66	Error analysis of nonconforming and mixed FEMs for second-order linear non-selfadjoint and indefinite elliptic problems. Numerische Mathematik, 2016, 133, 557-597.	0.9	15
67	Averaging technique for a posteriori error control in elasticity. Part III: Locking-free nonconforming FEM. Computer Methods in Applied Mechanics and Engineering, 2001, 191, 861-877.	3.4	14
68	A posteriori dual-mixed adaptive finite element error control for Lamé and Stokes equations. Numerische Mathematik, 2005, 101, 309-332.	0.9	14
69	The Adaptive Nonconforming FEM for the Pure Displacement Problem in Linear Elasticity is Optimal and Robust. SIAM Journal on Numerical Analysis, 2012, 50, 1264-1283.	1.1	14
70	Convergence of natural adaptive least squares finite element methods. Numerische Mathematik, 2017, 136, 1097-1115.	0.9	14
71	On the h-adaptive coupling of FE and BE for viscoplastic and elasto-plastic interface problems. Journal of Computational and Applied Mathematics, 1996, 75, 345-363.	1.1	13
72	A convergent adaptive finite element method for an optimal design problem. Numerische Mathematik, 2008, 108, 359-385.	0.9	13

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73	Numerical Analysis of Microstructure. Universitext, 2001, , 59-126.	0.2	13
74	Young-Measure approximations for elastodynamics with non-monotone stress-strain relations. ESAIM: Mathematical Modelling and Numerical Analysis, 2004, 38, 397-418.	0.8	12
75	Ten remarks on nonconvex minimisation for phase transition simulations. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 169-193.	3.4	12
76	A quasi-static boundary value problem in multi-surface elastoplasticity: part 2â€”numerical solution. Mathematical Methods in the Applied Sciences, 2005, 28, 881-901.	1.2	12
77	A Posteriori Error Estimates for Finite Element Approximation of Parabolic p-Laplacian. SIAM Journal on Numerical Analysis, 2006, 43, 2294-2319.	1.1	12
78	A convergent adaptive finite element method for the primal problem of elastoplasticity. International Journal for Numerical Methods in Engineering, 2006, 67, 1851-1887.	1.5	12
79	Convergence of adaptive finite element methods in computational mechanics. Applied Numerical Mathematics, 2009, 59, 2119-2130.	1.2	12
80	A posteriori error estimates for nonconforming finite element methods for fourth-order problems on rectangles. Numerische Mathematik, 2013, 124, 309-335.	0.9	12
81	Computational Survey on A Posteriori Error Estimators for the Crouzeixâ€”Raviart Nonconforming Finite Element Method for the Stokes Problem. Computational Methods in Applied Mathematics, 2014, 14, 35-54.	0.4	12
82	Constants in Discrete PoincarÃ© and Friedrichs Inequalities and Discrete Quasi-Interpolation. Computational Methods in Applied Mathematics, 2018, 18, 433-450.	0.4	12
83	Interface Problems in Viscoplasticity and Plasticity. SIAM Journal on Mathematical Analysis, 1994, 25, 1468-1487.	0.9	11
84	Estimation of Higher Sobolev Norm from Lower Order Approximation. SIAM Journal on Numerical Analysis, 2005, 42, 2136-2147.	1.1	11
85	Comparison results and unified analysis for first-order finite volume element methods for a Poisson model problem. IMA Journal of Numerical Analysis, 2016, 36, 1120-1142.	1.5	11
86	Asymptotic Exactness of the Least-Squares Finite Element Residual. SIAM Journal on Numerical Analysis, 2018, 56, 2008-2028.	1.1	11
87	Nonconforming finite element discretization for semilinear problems with trilinear nonlinearity. IMA Journal of Numerical Analysis, 2021, 41, 164-205.	1.5	11
88	A Priori and a Posteriori Error Analysis of the Crouzeixâ€”Raviart and Morley FEM with Original and Modified Right-Hand Sides. Computational Methods in Applied Mathematics, 2021, 21, 289-315.	0.4	11
89	Adaptive Morley FEM for the von KÃ¶rmÃ©n Equations with Optimal Convergence Rates. SIAM Journal on Numerical Analysis, 2021, 59, 696-719.	1.1	10
90	A Posteriori Error Control in Adaptive Qualocation Boundary Element Analysis for a Logarithmic-Kernel Integral Equation of the First Kind. SIAM Journal of Scientific Computing, 2003, 25, 259-283.	1.3	9

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91	Convergence for stabilisation of degenerately convex minimisation problems. <i>Interfaces and Free Boundaries</i> , 2004, 6, 253-269.	0.2	9
92	Three First-Order Finite Volume Element Methods for Stokes Equations under Minimal Regularity Assumptions. <i>SIAM Journal on Numerical Analysis</i> , 2018, 56, 2648-2671.	1.1	9
93	Adaptive algorithms for scalar non-convex variational problems. <i>Applied Numerical Mathematics</i> , 1998, 26, 203-216.	1.2	8
94	Convergence of adaptive boundary element methods. <i>Journal of Integral Equations and Applications</i> , 2012, 24, .	0.2	8
95	Comparison Results of Nonstandard P_2 Finite Element Methods for the Biharmonic Problem. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 2015, 49, 977-990.	0.8	8
96	The norm of a discretized gradient in $H(\operatorname{div})^*$ for a posteriori finite element error analysis. <i>Numerische Mathematik</i> , 2016, 132, 519-539.	0.9	8
97	Discontinuous Galerkin with Weakly Over-Penalized Techniques for Reissner–Mindlin Plates. <i>Journal of Scientific Computing</i> , 2015, 64, 401-424.	1.1	7
98	Relaxation and the Computation of Effective Energies and Microstructures in Solid Mechanics. , 2006, , 197-224.		7
99	Averaging Techniques for a Posteriori Error Control in Finite Element and Boundary Element Analysis. , 2007, , 29-59.		7
100	On the Strong Convergence of Gradients in Stabilized Degenerate Convex Minimization Problems. <i>SIAM Journal on Numerical Analysis</i> , 2010, 47, 4569-4580.	1.1	6
101	A low-order discontinuous Petrov–Galerkin method for the Stokes equations. <i>Numerische Mathematik</i> , 2018, 140, 1-34.	0.9	6
102	Optimal Convergence Rates for Adaptive Lowest-Order Discontinuous Petrov–Galerkin Schemes. <i>SIAM Journal on Numerical Analysis</i> , 2018, 56, 1091-1111.	1.1	6
103	A Skeletal Finite Element Method Can Compute Lower Eigenvalue Bounds. <i>SIAM Journal on Numerical Analysis</i> , 2020, 58, 109-124.	1.1	6
104	Clément Interpolation and Its Role in Adaptive Finite Element Error Control. , 2006, , 27-43.		5
105	Mixed Finite Element Method for a Degenerate Convex Variational Problem from Topology Optimization. <i>SIAM Journal on Numerical Analysis</i> , 2012, 50, 522-543.	1.1	5
106	Weakly over-penalized discontinuous Galerkin schemes for Reissner–Mindlin plates without the shear variable. <i>Numerische Mathematik</i> , 2015, 130, 395-423.	0.9	5
107	An optimal adaptive finite element method for elastoplasticity. <i>Numerische Mathematik</i> , 2016, 132, 131-154.	0.9	5
108	Quasi-Optimality of Adaptive Mixed FEMs for Non-selfadjoint Indefinite Second-Order Linear Elliptic Problems. <i>Computational Methods in Applied Mathematics</i> , 2019, 19, 233-250.	0.4	5

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109	Residual-based a posteriori error analysis for symmetric mixed Arnold-Winther FEM. Numerische Mathematik, 2019, 142, 205-234.	0.9	5
110	Unstabilized Hybrid High-order Method for a Class of Degenerate Convex Minimization Problems. SIAM Journal on Numerical Analysis, 2021, 59, 1348-1373.	1.1	5
111	A priori and a posteriori error analysis of the lowest-order NCVEM for second-order linear indefinite elliptic problems. Numerische Mathematik, 2022, 151, 551-600.	0.9	5
112	Interface problems in elastoviscoplasticity. Quarterly of Applied Mathematics, 1995, 53, 633-655.	0.5	4
113	Adaptive boundary-element methods for transmission problems. Journal of the Australian Mathematical Society Series B Applied Mathematics, 1997, 38, 336-367.	0.3	4
114	An adaptive non-conforming finite-element method for Reissner-Mindlin plates. International Journal for Numerical Methods in Engineering, 2003, 56, 2313-2330.	1.5	4
115	FE2-Simulations in Elasto-Plasticity using Statistically Similar Representative Volume Elements. Proceedings in Applied Mathematics and Mechanics, 2009, 9, 39-42.	0.2	4
116	Guaranteed lower bounds on eigenvalues of elliptic operators with a hybrid high-order method. Numerische Mathematik, 2021, 149, 273-304.	0.9	4
117	Partition of unity for localization in implicit a posteriori finite element error control for linear elasticity. International Journal for Numerical Methods in Engineering, 2008, 73, 71-95.	1.5	3
118	Adaptive Mixed Finite Element Methods for Non-self-adjoint Indefinite Second-Order Elliptic PDEs with Optimal Rates. SIAM Journal on Numerical Analysis, 2021, 59, 955-982.	1.1	3
119	On the Convergence of Adaptive Finite Element Methods. Proceedings in Applied Mathematics and Mechanics, 2004, 4, 27-30.	0.2	2
120	A posteriori error analysis for eigenvalue problems. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1026203-1026204.	0.2	2
121	Advanced Computational Engineering. Oberwolfach Reports, 2012, 9, 457-553.	0.0	2
122	Domain decomposition for a non-smooth convex minimization problem and its application to plasticity. Numerical Linear Algebra With Applications, 1997, 4, 177-190.	0.9	2
123	An a posteriori estimate for nonconforming finite element methods. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 1998, 78, 871-872.	0.9	1
124	An averaging scheme for macroscopic numerical simulation of nonconvex minimization problems. BIT Numerical Mathematics, 2007, 47, 601-611.	1.0	1
125	A posteriori error analysis of stabilised FEM for degenerate convex minimisation problems under weak regularity assumptions. Advanced Modeling and Simulation in Engineering Sciences, 2014, 1, 5.	0.7	1
126	Convergence of $\text{dG}(1)$ in elastoplastic evolution. Numerische Mathematik, 2019, 141, 715-742.	0.9	1

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127	Finite Element Computation of Macroscopic Quantities in Nonconvex Minimisation Problems and Applications in Materials Science. , 2000, , 69-79.		1
128	Mini-Workshop: Convergence of Adaptive Algorithms. Oberwolfach Reports, 2006, 2, 2091-2138.	0.0	0
129	On stabilized models in micromagnetics. Computational Mechanics, 2007, 39, 663-672.	2.2	0
130	New adaptive mixed finite element method (AMFEM). Proceedings in Applied Mathematics and Mechanics, 2008, 8, 10049-10052.	0.2	0
131	Computational Engineering. Oberwolfach Reports, 2015, 12, 2533-2592.	0.0	0
132	Adaptive Algorithms. Oberwolfach Reports, 2017, 13, 2513-2570.	0.0	0
133	Reliable Averaging for the Primal Variable in the Courant FEM and Hierarchical Error Estimators on Red-Refined Meshes. Computational Methods in Applied Mathematics, 2016, 16, 213-230.	0.4	0
134	Computational Engineering. Oberwolfach Reports, 2018, 15, 2859-2913.	0.0	0
135	Numerische Schwingungssimulation: Modellierung und Algorithmen. Mathematische Semesterberichte, 2002, 48, 193-210.	0.2	0
136	Advancements in the Computational Calculus of Variations. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2010, , 29-50.	0.1	0
137	An a posteriori error estimate for the unsymmetric coupling of FEM and BEM. Notes on Numerical Fluid Mechanics, 1995, , 25-36.	0.1	0
138	Numerical Algorithms for the Simulation of Finite Plasticity with Microstructures. Lecture Notes in Applied and Computational Mechanics, 2015, , 1-30.	2.0	0
139	Towards Effective Simulation of Effective Elastoplastic Evolution. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2008, , 41-51.	0.1	0
140	Convergent adaptive hybrid higher-order schemes for convex minimization. Numerische Mathematik, 0, , ,	0.9	0