

# Carsten Carstensen

## List of Publications by Year in descending order

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140  
papers

3,896  
citations

126858

33  
h-index

143943

57  
g-index

146  
all docs

146  
docs citations

146  
times ranked

1072  
citing authors

#	ARTICLE	IF	CITATIONS
1	A priori and a posteriori error analysis of the lowest-order NCVEM for second-order linear indefinite elliptic problems. <i>Numerische Mathematik</i> , 2022, 151, 551-600.	0.9	5
2	Nonconforming finite element discretization for semilinear problems with trilinear nonlinearity. <i>IMA Journal of Numerical Analysis</i> , 2021, 41, 164-205.	1.5	11
3	Adaptive Mixed Finite Element Methods for Non-self-adjoint Indefinite Second-Order Elliptic PDEs with Optimal Rates. <i>SIAM Journal on Numerical Analysis</i> , 2021, 59, 955-982.	1.1	3
4	Adaptive Morley FEM for the von Kármán Equations with Optimal Convergence Rates. <i>SIAM Journal on Numerical Analysis</i> , 2021, 59, 696-719.	1.1	10
5	Unstabilized Hybrid High-order Method for a Class of Degenerate Convex Minimization Problems. <i>SIAM Journal on Numerical Analysis</i> , 2021, 59, 1348-1373.	1.1	5
6	A Priori and a Posteriori Error Analysis of the Crouzeix–Raviart and Morley FEM with Original and Modified Right-Hand Sides. <i>Computational Methods in Applied Mathematics</i> , 2021, 21, 289-315.	0.4	11
7	Guaranteed lower bounds on eigenvalues of elliptic operators with a hybrid high-order method. <i>Numerische Mathematik</i> , 2021, 149, 273-304.	0.9	4
8	A Skeletal Finite Element Method Can Compute Lower Eigenvalue Bounds. <i>SIAM Journal on Numerical Analysis</i> , 2020, 58, 109-124.	1.1	6
9	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
10	Residual-based a posteriori error analysis for symmetric mixed Arnold–Winther FEM. <i>Numerische Mathematik</i> , 2019, 142, 205-234.	0.9	5
11	Convergence of $dG(1)$ in elastoplastic evolution. <i>Numerische Mathematik</i> , 2019, 141, 715-742.	0.9	1
12	A low-order discontinuous Petrov–Galerkin method for the Stokes equations. <i>Numerische Mathematik</i> , 2018, 140, 1-34.	0.9	6
13	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
14	Constants in Discrete Poincaré and Friedrichs Inequalities and Discrete Quasi-Interpolation. <i>Computational Methods in Applied Mathematics</i> , 2018, 18, 433-450.	0.4	12
15	Computational Engineering. <i>Oberwolfach Reports</i> , 2018, 15, 2859-2913.	0.0	0
16	Asymptotic Exactness of the Least-Squares Finite Element Residual. <i>SIAM Journal on Numerical Analysis</i> , 2018, 56, 2008-2028.	1.1	11
17	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
18	Adaptive Algorithms. <i>Oberwolfach Reports</i> , 2017, 13, 2513-2570.	0.0	0

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19	Convergence of natural adaptive least squares finite element methods. <i>Numerische Mathematik</i> , 2017, 136, 1097-1115.	0.9	14
20	Reliable Averaging for the Primal Variable in the Courant FEM and Hierarchical Error Estimators on Red-Refined Meshes. <i>Computational Methods in Applied Mathematics</i> , 2016, 16, 213-230.	0.4	0
21	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
22	Comparison results and unified analysis for first-order finite volume element methods for a Poisson model problem. <i>IMA Journal of Numerical Analysis</i> , 2016, 36, 1120-1142.	1.5	11
23	An optimal adaptive finite element method for elastoplasticity. <i>Numerische Mathematik</i> , 2016, 132, 131-154.	0.9	5
24	Error analysis of nonconforming and mixed FEMs for second-order linear non-selfadjoint and indefinite elliptic problems. <i>Numerische Mathematik</i> , 2016, 133, 557-597.	0.9	15
25	Computational Engineering. <i>Oberwolfach Reports</i> , 2015, 12, 2533-2592.	0.0	0
26	Discontinuous Galerkin with Weakly Over-Penalized Techniques for Reissner-Mindlin Plates. <i>Journal of Scientific Computing</i> , 2015, 64, 401-424.	1.1	7
27	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
28	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
29	Convergence and Optimality of Adaptive Least Squares Finite Element Methods. <i>SIAM Journal on Numerical Analysis</i> , 2015, 53, 43-62.	1.1	28
30	Numerical Algorithms for the Simulation of Finite Plasticity with Microstructures. <i>Lecture Notes in Applied and Computational Mechanics</i> , 2015, , 1-30.	2.0	0
31	Computational Survey on A Posteriori Error Estimators for the Crouzeix-Raviart Nonconforming Finite Element Method for the Stokes Problem. <i>Computational Methods in Applied Mathematics</i> , 2014, 14, 35-54.	0.4	12
32	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
33	A Posteriori Error Control for DPG Methods. <i>SIAM Journal on Numerical Analysis</i> , 2014, 52, 1335-1353.	1.1	69
34	Guaranteed lower eigenvalue bounds for the biharmonic equation. <i>Numerische Mathematik</i> , 2014, 126, 33-51.	0.9	58
35	A posteriori error analysis of stabilised FEM for degenerate convex minimisation problems under weak regularity assumptions. <i>Advanced Modeling and Simulation in Engineering Sciences</i> , 2014, 1, 5.	0.7	1
36	Guaranteed lower bounds for eigenvalues. <i>Mathematics of Computation</i> , 2014, 83, 2605-2629.	1.1	63

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37	Adaptive nonconforming Crouzeix-Raviart FEM for eigenvalue problems. <i>Mathematics of Computation</i> , 2014, 84, 1061-1087.	1.1	29
38	A posteriori error estimates for nonconforming finite element methods for fourth-order problems on rectangles. <i>Numerische Mathematik</i> , 2013, 124, 309-335.	0.9	12
39	Optimal adaptive nonconforming FEM for the Stokes problem. <i>Numerische Mathematik</i> , 2013, 123, 291-308.	0.9	28
40	Quasi-optimal Adaptive Pseudostress Approximation of the Stokes Equations. <i>SIAM Journal on Numerical Analysis</i> , 2013, 51, 1715-1734.	1.1	21
41	Explicit Error Estimates for Courant, Crouzeix-Raviart and Raviart-Thomas Finite Element Methods. <i>Journal of Computational Mathematics</i> , 2012, 30, 337-353.	0.2	36
42	Convergence of adaptive boundary element methods. <i>Journal of Integral Equations and Applications</i> , 2012, 24, .	0.2	8
43	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
44	The Adaptive Nonconforming FEM for the Pure Displacement Problem in Linear Elasticity is Optimal and Robust. <i>SIAM Journal on Numerical Analysis</i> , 2012, 50, 1264-1283.	1.1	14
45	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
46	Advanced Computational Engineering. <i>Oberwolfach Reports</i> , 2012, 9, 457-553.	0.0	2
47	A Priori and A Posteriori Pseudostress-velocity Mixed Finite Element Error Analysis for the Stokes Problem. <i>SIAM Journal on Numerical Analysis</i> , 2011, 49, 2501-2523.	1.1	44
48	An optimal adaptive mixed finite element method. <i>Mathematics of Computation</i> , 2011, 80, 649-649.	1.1	27
49	An oscillation-free adaptive FEM for symmetric eigenvalue problems. <i>Numerische Mathematik</i> , 2011, 118, 401-427.	0.9	34
50	Uniform convergence and a posteriori error estimation for assumed stress hybrid finite element methods. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2011, 200, 2421-2433.	3.4	15
51	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
52	Advancements in the Computational Calculus of Variations. <i>IUTAM Symposium on Cellular, Molecular and Tissue Mechanics</i> , 2010, , 29-50.	0.1	0
53	A unifying theory of a posteriori error control for discontinuous Galerkin FEM. <i>Numerische Mathematik</i> , 2009, 112, 363-379.	0.9	39
54	FE2-Simulations in Elasto-Plasticity using Statistically Similar Representative Volume Elements. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2009, 9, 39-42.	0.2	4

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55	Convergence of adaptive finite element methods in computational mechanics. Applied Numerical Mathematics, 2009, 59, 2119-2130.	1.2	12
56	Mixed analyticalâ€“numerical relaxation in finite single-slip crystal plasticity. Continuum Mechanics and Thermodynamics, 2008, 20, 275-301.	1.4	28
57	A convergent adaptive finite element method for an optimal design problem. Numerische Mathematik, 2008, 108, 359-385.	0.9	13
58	New adaptive mixed finite element method (AMFEM). Proceedings in Applied Mathematics and Mechanics, 2008, 8, 10049-10052.	0.2	0
59	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
60	Towards Effective Simulation of Effective Elastoplastic Evolution. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2008, , 41-51.	0.1	0
61	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
62	Framework for the A Posteriori Error Analysis of Nonconforming Finite Elements. SIAM Journal on Numerical Analysis, 2007, 45, 68-82.	1.1	59
63	A posteriori error analysis for eigenvalue problems. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1026203-1026204.	0.2	2
64	Convergence analysis of a conforming adaptive finite element method for an obstacle problem. Numerische Mathematik, 2007, 107, 455-471.	0.9	68
65	An averaging scheme for macroscopic numerical simulation of nonconvex minimization problems. BIT Numerical Mathematics, 2007, 47, 601-611.	1.0	1
66	On stabilized models in micromagnetics. Computational Mechanics, 2007, 39, 663-672.	2.2	0
67	Averaging Techniques for a Posteriori Error Control in Finite Element and Boundary Element Analysis. , 2007, , 29-59.		7
68	Mini-Workshop: Convergence of Adaptive Algorithms. Oberwolfach Reports, 2006, 2, 2091-2138.	0.0	0
69	Clément Interpolation and Its Role in Adaptive Finite Element Error Control. , 2006, , 27-43.		5
70	Averaging Techniques for the Effective Numerical Solution of Symm's Integral Equation of the First Kind. SIAM Journal of Scientific Computing, 2006, 27, 1226-1260.	1.3	32
71	A Posteriori Error Estimates for Finite Element Approximation of Parabolic p-Laplacian. SIAM Journal on Numerical Analysis, 2006, 43, 2294-2319.	1.1	12
72	Error reduction and convergence for an adaptive mixed finite element method. Mathematics of Computation, 2006, 75, 1033-1043.	1.1	67

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73	A posteriori FE error control for p-Laplacian by gradient recovery in quasi-norm. Mathematics of Computation, 2006, 75, 1599-1616.	1.1	16
74	Convergence analysis of an adaptive nonconforming finite element method. Numerische Mathematik, 2006, 103, 251-266.	0.9	72
75	Residual-based a posteriori error estimate for a mixed Reissner-Mindlin plate finite element method. Numerische Mathematik, 2006, 103, 225-250.	0.9	17
76	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
77	Relaxation and the Computation of Effective Energies and Microstructures in Solid Mechanics. , 2006, , 197-224.		7
78	Ten remarks on nonconvex minimisation for phase transition simulations. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 169-193.	3.4	12
79	A quasi-static boundary value problem in multi-surface elastoplasticity: part 2 "numerical solution. Mathematical Methods in the Applied Sciences, 2005, 28, 881-901.	1.2	12
80	A posteriori dual-mixed adaptive finite element error control for Lamé and Stokes equations. Numerische Mathematik, 2005, 101, 309-332.	0.9	14
81	Estimation of Higher Sobolev Norm from Lower Order Approximation. SIAM Journal on Numerical Analysis, 2005, 42, 2136-2147.	1.1	11
82	Convergence for stabilisation of degenerately convex minimisation problems. Interfaces and Free Boundaries, 2004, 6, 253-269.	0.2	9
83	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
84	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
85	A posteriori error analysis for elliptic pdes on domains with complicated structures. Numerische Mathematik, 2004, 96, 691-721.	0.9	15
86	Residual-based a posteriori error estimate for hypersingular equation on surfaces. Numerische Mathematik, 2004, 97, 397-425.	0.9	40
87	On the Convergence of Adaptive Finite Element Methods. Proceedings in Applied Mathematics and Mechanics, 2004, 4, 27-30.	0.2	2
88	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
89	Young-Measure approximations for elastodynamics with non-monotone stress-strain relations. ESAIM: Mathematical Modelling and Numerical Analysis, 2004, 38, 397-418.	0.8	12
90	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

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91	Averaging techniques for reliable a posteriori FE-error control in elastoplasticity with hardening. Computer Methods in Applied Mechanics and Engineering, 2003, 192, 1435-1450.	3.4	27
92	A Posteriori Error Control in Adaptive Quallocation 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
93	A Posteriori Finite Element Error Control for the P-Laplace Problem. SIAM Journal of Scientific Computing, 2003, 25, 792-814.	1.3	27
94	Residual-Based A Posteriori Error Estimate for a Nonconforming Reissner-Mindlin Plate Finite Element. SIAM Journal on Numerical Analysis, 2002, 39, 2034-2044.	1.1	24
95	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
96	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
97	Local Stress Regularity in Scalar Nonconvex Variational Problems. SIAM Journal on Mathematical Analysis, 2002, 34, 495-509.	0.9	45
98	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
99	A posteriori error estimates for nonconforming finite element methods. Numerische Mathematik, 2002, 92, 233-256.	0.9	73
100	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
101	Numerische Schwingungssimulation: Modellierung und Algorithmen. Mathematische Semesterberichte, 2002, 48, 193-210.	0.2	0
102	Numerical Analysis of a Relaxed Variational Model of Hysteresis in Two-Phase Solids. ESAIM: Mathematical Modelling and Numerical Analysis, 2001, 35, 865-878.	0.8	24
103	Numerical analysis of relaxed micromagnetics by penalised finite elements. Numerische Mathematik, 2001, 90, 65-99.	0.9	24
104	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
105	Averaging technique for FE a posteriori error control in elasticity. Part II: $\hat{\nu}$ -independent estimates. Computer Methods in Applied Mechanics and Engineering, 2001, 190, 4663-4675.	3.4	24
106	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
107	Title is missing!. Advances in Computational Mathematics, 2001, 15, 79-106.	0.8	19
108	Numerical Analysis of Microstructure. Universitext, 2001, , 59-126.	0.2	13

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109	A posteriori error control in low-order finite element discretisations of incompressible stationary flow problems. <i>Mathematics of Computation</i> , 2000, 70, 1353-1382.	1.1	55
110	Numerical Analysis of Time-Depending PrimalElastoplasticity with Hardening. <i>SIAM Journal on Numerical Analysis</i> , 2000, 37, 1271-1294.	1.1	34
111	Numerical Analysis of Compatible Phase Transitions in Elastic Solids. <i>SIAM Journal on Numerical Analysis</i> , 2000, 37, 2061-2081.	1.1	32
112	Finite Element Computation of Macroscopic Quantities in Nonconvex Minimisation Problems and Applications in Materials Science. , 2000, , 69-79.		1
113	Adaptive numerical analysis in primal elastoplasticity with hardening. <i>Computer Methods in Applied Mechanics and Engineering</i> , 1999, 171, 175-204.	3.4	66
114	Remarks around 50 lines of Matlab: short finite element implementation. <i>Numerical Algorithms</i> , 1999, 20, 117-137.	1.1	148
115	Numerical analysis of the primal problem of elastoplasticity with hardening. <i>Numerische Mathematik</i> , 1999, 82, 577-597.	0.9	42
116	Edge Residuals Dominate A Posteriori Error Estimates for Low Order Finite Element Methods. <i>SIAM Journal on Numerical Analysis</i> , 1999, 36, 1571-1587.	1.1	157
117	Fully Reliable Localized Error Control in the FEM. <i>SIAM Journal of Scientific Computing</i> , 1999, 21, 1465-1484.	1.3	85
118	Quasi-Interpolation and A Posteriori Error Analysis in Finite Element Methods. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 1999, 33, 1187-1202.	0.8	112
119	Adaptive algorithms for scalar non-convex variational problems. <i>Applied Numerical Mathematics</i> , 1998, 26, 203-216.	1.2	8
120	An a posteriori estimate for nonconforming finite element methods. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 1998, 78, 871-872.	0.9	1
121	An a posteriori error estimate for a first-kind integral equation. <i>Mathematics of Computation</i> , 1997, 66, 139-156.	1.1	78
122	Adaptive boundary-element methods for transmission problems. <i>Journal of the Australian Mathematical Society Series B Applied Mathematics</i> , 1997, 38, 336-367.	0.3	4
123	Numerical solution of the scalar double-well problem allowing microstructure. <i>Mathematics of Computation</i> , 1997, 66, 997-1027.	1.1	83
124	A posteriori error estimate for the mixed finite element method. <i>Mathematics of Computation</i> , 1997, 66, 465-477.	1.1	213
125	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
126	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



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127	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
128	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
129	Adaptive Boundary Element Methods for Some First Kind Integral Equations. SIAM Journal on Numerical Analysis, 1996, 33, 2166-2183.	1.1	55
130	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
131	Symmetric coupling of boundary elements and Raviart-Thomas-type mixed finite elements in elastostatics. Numerische Mathematik, 1996, 75, 153-174.	0.9	27
132	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
133	A posteriori error estimates for hp-boundary element methods. Applicable Analysis, 1996, 61, 233-253.	0.6	21
134	Interface problems in elastoviscoplasticity. Quarterly of Applied Mathematics, 1995, 53, 633-655.	0.5	4
135	Adaptive coupling of boundary elements and finite elements. ESAIM: Mathematical Modelling and Numerical Analysis, 1995, 29, 779-817.	0.8	53
136	A posteriori error estimates for boundary element methods. Mathematics of Computation, 1995, 64, 483-483.	1.1	50
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	Interface Problems in Viscoplasticity and Plasticity. SIAM Journal on Mathematical Analysis, 1994, 25, 1468-1487.	0.9	11
139	Interface problem in holonomic elastoplasticity. Mathematical Methods in the Applied Sciences, 1993, 16, 819-835.	1.2	32
140	Convergent adaptive hybrid higher-order schemes for convex minimization. Numerische Mathematik, 0, ..	0.9	0