

Andrea Walther

List of Publications by Year in descending order

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72
papers

2,251
citations

516215

16
h-index

395343

33
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76
all docs

76
docs citations

76
times ranked

1534
citing authors

#	ARTICLE	IF	CITATIONS
1	Algorithm 799: revolve. ACM Transactions on Mathematical Software, 2000, 26, 19-45.	1.6	342
2	Getting Started with ADOL-C. Chapman & Hall/CRC Computational Science, 2012, , 181-202.	0.5	85
3	On constrained optimization by adjoint based quasi-Newton methods. Optimization Methods and Software, 2002, 17, 869-889.	1.6	65
4	Evaluating higher derivative tensors by forward propagation of univariate Taylor series. Mathematics of Computation, 2000, 69, 1117-1131.	1.1	55
5	Automatic differentiation of explicit Runge-Kutta methods for optimal control. Computational Optimization and Applications, 2007, 36, 83-108.	0.9	49
6	Efficient Computation of Sparse Hessians Using Coloring and Automatic Differentiation. INFORMS Journal on Computing, 2009, 21, 209-223.	1.0	49
7	Evaluating Gradients in Optimal Control: Continuous Adjoints Versus Automatic Differentiation. Journal of Optimization Theory and Applications, 2004, 122, 63-86.	0.8	31
8	On the efficient computation of high-order derivatives for implicitly defined functions. Computer Physics Communications, 2010, 181, 756-764.	3.0	29
9	New Algorithms for Optimal Online Checkpointing. SIAM Journal of Scientific Computing, 2010, 32, 836-854.	1.3	29
10	MultiStage Approaches for Optimal Offline Checkpointing. SIAM Journal of Scientific Computing, 2009, 31, 1946-1967.	1.3	28
11	An adjoint-based SQP algorithm with quasi-Newton Jacobian updates for inequality constrained optimization. Optimization Methods and Software, 2010, 25, 531-552.	1.6	27
12	An optimal memory-reduced procedure for calculating adjoints of the instationary Navier-Stokes equations. Optimal Control Applications and Methods, 2006, 27, 19-40.	1.3	25
13	First- and second-order optimality conditions for piecewise smooth objective functions. Optimization Methods and Software, 2016, 31, 904-930.	1.6	23
14	Automatic Differentiation of an Entire Design Chain for Aerodynamic Shape Optimization. , 2007, , 454-461.		20
15	Computing sparse Hessians with automatic differentiation. ACM Transactions on Mathematical Software, 2008, 34, 1-15.	1.6	19
16	Global convergence of quasi-Newton methods based on adjoint Broyden updates. Applied Numerical Mathematics, 2009, 59, 1120-1136.	1.2	19
17	Algorithmic differentiation of the Open CASCADE Technology CAD kernel and its coupling with an adjoint CFD solver. Optimization Methods and Software, 2018, 33, 813-828.	1.6	19
18	Advantages of Binomial Checkpointing for Memory-reduced Adjoint Calculations. , 2004, , 834-843.		19

#	ARTICLE	IF	CITATIONS
19	An Inexact Trust-Region Algorithm for the Optimization of Periodic Adsorption Processes. <i>Industrial & Engineering Chemistry Research</i> , 2010, 49, 12004-12013.	1.8	17
20	On the local convergence of adjoint Broyden methods. <i>Mathematical Programming</i> , 2010, 121, 221-247.	1.6	16
21	On Lipschitz optimization based on gray-box piecewise linearization. <i>Mathematical Programming</i> , 2016, 158, 383-415.	1.6	16
22	Parametric sensitivities for optimal control problems using automatic differentiation. <i>Optimal Control Applications and Methods</i> , 2003, 24, 297-314.	1.3	15
23	Maintaining factorized KKT systems subject to rank-one updates of Hessians and Jacobians. <i>Optimization Methods and Software</i> , 2007, 22, 279-295.	1.6	15
24	Adjoint concepts for the optimal control of Burgers equation. <i>Computational Optimization and Applications</i> , 2007, 36, 109-133.	0.9	15
25	On the numerical stability of algorithmic differentiation. <i>Computing (Vienna/New York)</i> , 2012, 94, 125-149.	3.2	14
26	Parallel Reverse Mode Automatic Differentiation for OpenMP Programs with ADOL-C. <i>Lecture Notes in Computational Science and Engineering</i> , 2008, , 163-173.	0.1	14
27	Relaxing Kink Qualifications and Proving Convergence Rates in Piecewise Smooth Optimization. <i>SIAM Journal on Optimization</i> , 2019, 29, 262-289.	1.2	10
28	Three-dimensional reconstruction of a comet nucleus by optimal control of Maxwell's equations: A contribution to the experiment CONSERT onboard space craft Rosetta. , 2010, , .		9
29	An algorithm for nonsmooth optimization by successive piecewise linearization. <i>Mathematical Programming</i> , 2019, 177, 343-370.	1.6	9
30	An introduction to algorithmic differentiation. <i>Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery</i> , 2020, 10, e1334.	4.6	9
31	Algorithmic differentiation for piecewise smooth functions: a case study for robust optimization. <i>Optimization Methods and Software</i> , 2018, 33, 1073-1088.	1.6	8
32	Exploiting Sparsity in Jacobian Computation via Coloring and Automatic Differentiation: A Case Study in a Simulated Moving Bed Process. <i>Lecture Notes in Computational Science and Engineering</i> , 2008, , 327-338.	0.1	7
33	A First-Order Convergence Analysis of Trust-Region Methods with Inexact Jacobians. <i>SIAM Journal on Optimization</i> , 2008, 19, 307-325.	1.2	6
34	On an extension of one-shot methods to incorporate additional constraints. <i>Optimization Methods and Software</i> , 2016, 31, 494-510.	1.6	6
35	On an inexact trust-region SQP-filter method for constrained nonlinear optimization. <i>Computational Optimization and Applications</i> , 2016, 63, 613-638.	0.9	6
36	Finite convergence of an active signature method to local minima of piecewise linear functions. <i>Optimization Methods and Software</i> , 2019, 34, 1035-1055.	1.6	6

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37	Optimal r -order of an adjoint Broyden method without the assumption of linearly independent steps. Optimization Methods and Software, 2008, 23, 215-225.	1.6	5
38	Pressure Swing Adsorption Optimization Strategies for CO2 Capture. Computer Aided Chemical Engineering, 2015, 36, 197-223.	0.3	5
39	Characterizing and Testing Subdifferential Regularity in Piecewise Smooth Optimization. SIAM Journal on Optimization, 2019, 29, 1473-1501.	1.2	5
40	On the Efficient Generation of Taylor Expansions for DAE Solutions by Automatic Differentiation. Lecture Notes in Computer Science, 2006, , 1089-1098.	1.0	5
41	Numerical experiments with an inexact Jacobian trust-region algorithm. Computational Optimization and Applications, 2011, 48, 255-271.	0.9	4
42	A first-order convergence analysis of trust-region methods with inexact Jacobians and inequality constraints. Optimization Methods and Software, 2012, 27, 373-389.	1.6	4
43	Optimization of triple-ring electrodes on piezoceramic transducers using algorithmic differentiation. Optimization Methods and Software, 2018, 33, 868-888.	1.6	4
44	Nonsmooth optimization by successive abs-linearization in function spaces. Applicable Analysis, 2020, , 1-16.	0.6	4
45	OPTIMISATION OF A U-BEND USING A CAD-BASED ADJOINT METHOD WITH DIFFERENTIATED CAD KERNEL. , 2016, , .		4
46	Multiple vectorâ€“Jacobian products are cheap. Applied Numerical Mathematics, 1999, 30, 367-377.	1.2	3
47	Pulse shaping for on-demand emission of single Raman photons from a quantum-dot biexciton. Physical Review B, 2022, 105, .	1.1	3
48	Computation of derivatives for structure preserving optimal control using automatic differentiation. Proceedings in Applied Mathematics and Mechanics, 2010, 10, 585-586.	0.2	2
49	Computing roots for the modelling of waves in acoustic waveguides. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 763-764.	0.2	2
50	Reliable computation of roots in analytical waveguide modeling using an interval-newton approach and algorithmic differentiation. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2013, 60, 2597-2606.	1.7	2
51	Polyhedral DC Decomposition and DCA Optimization of Piecewise Linear Functions. Algorithms, 2020, 13, 166.	1.2	2
52	On the Efficient Computation of Sparsity Patterns for Hessians. Lecture Notes in Computational Science and Engineering, 2012, , 139-149.	0.1	2
53	Adjoints for Time-Dependent Optimal Control. Lecture Notes in Computational Science and Engineering, 2008, , 175-185.	0.1	2
54	Program reversals for evolutions with non-uniform step costs. Acta Informatica, 2004, 40, 235-263.	0.5	1

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55	Calculus-based optimization of the electron dynamics in nanostructures. Photonics and Nanostructures - Fundamentals and Applications, 2011, 9, 328-336.	1.0	1
56	Tailoring the high-harmonic emission in two-level systems and semiconductors by pulse shaping. Journal of the Optical Society of America B: Optical Physics, 2012, 29, A36.	0.9	1
57	An Exploratory Line Search for Piecewise Differentiable Objective Functions based on Algorithmic Differentiation. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 631-632.	0.2	1
58	Material parameter determination of a piezoelectric disc with triple-ring-electrodes for increased sensitivity. Proceedings of Meetings on Acoustics, 2017, , .	0.3	1
59	Efficient Numerical Solution of Geometric Inverse Problems Involving Maxwell's Equations Using Shape Derivatives and Automatic Code Generation. SIAM Journal of Scientific Computing, 2018, 40, B405-B428.	1.3	1
60	New Results for the Handling of Additional Equality Constraints in One-Shot Optimization. Vietnam Journal of Mathematics, 2018, 46, 825-836.	0.4	1
61	Combinatorial Problems in Algorithmic Differentiation. Chapman & Hall/CRC Computational Science, 2012, , 129-161.	0.5	1
62	Efficient calculation of sensitivities for optimization problems. Discussiones Mathematicae: Differential Inclusions, Control and Optimization, 2007, 27, 119.	0.2	1
63	Structure-Exploiting Automatic Differentiation of Finite Element Discretizations. Lecture Notes in Computational Science and Engineering, 2008, , 339-349.	0.1	1
64	Algorithmic Differentiation for Calculus-based Optimization. , 2010, , .		0
65	Efficient aerodynamic shape optimization by structure exploitation. Optimization and Engineering, 2012, 13, 563.	1.3	0
66	Engineering high harmonic generation in semiconductors via pulse shaping. , 2012, , .		0
67	SCADOPT: An Open-Source HPC Framework for Solving PDE Constrained Optimization Problems Using AD. , 2014, , .		0
68	Simulative Ultraschall-Untersuchung von Pitch-Catch-Messanordnungen für große zylindrische Stahl-Prüflinge und gradientenbasierte Bildgebung. TM Technisches Messen, 2015, 82, 440-450.	0.3	0
69	An inverse approach to the characterisation of material parameters of piezoelectric discs with triple-ring-electrodes. TM Technisches Messen, 2019, 86, 59-65.	0.3	0
70	Structure Exploiting Adjoints for Finite Element Discretizations. International Series of Numerical Mathematics, 2012, , 183-196.	1.0	0
71	Beyond the Oracle: Opportunities of Piecewise Differentiation. , 2020, , 331-361.		0
72	Algorithms Based on Abs-Linearization for Non-smooth Optimization with PDE Constraints. International Series of Numerical Mathematics, 2022, , 377-395.	1.0	0