

# Roland Herzog

## List of Publications by Year in descending order

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84  
papers

1,254  
citations

430874

18  
h-index

395702

33  
g-index

87  
all docs

87  
docs citations

87  
times ranked

763  
citing authors

#	ARTICLE	IF	CITATIONS
1	Computational homogenization of elasticity on a staggered grid. International Journal for Numerical Methods in Engineering, 2016, 105, 693-720.	2.8	156
2	Algorithms for PDE-constrained optimization. GAMM Mitteilungen, 2010, 33, 163-176.	5.5	90
3	Preconditioned Conjugate Gradient Method for Optimal Control Problems with Control and State Constraints. SIAM Journal on Matrix Analysis and Applications, 2010, 31, 2291-2317.	1.4	83
4	Directional Sparsity in Optimal Control of Partial Differential Equations. SIAM Journal on Control and Optimization, 2012, 50, 943-963.	2.1	78
5	Optimality Conditions and Error Analysis of Semilinear Elliptic Control Problems with $L^1$ Cost Functional. SIAM Journal on Optimization, 2012, 22, 795-820.	2.0	76
6	Integrability of displacement and stresses in linear and nonlinear elasticity with mixed boundary conditions. Journal of Mathematical Analysis and Applications, 2011, 382, 802-813.	1.0	46
7	B- and Strong Stationarity for Optimal Control of Static Plasticity with Hardening. SIAM Journal on Optimization, 2013, 23, 321-352.	2.0	39
8	State-constrained optimal control of the three-dimensional stationary Navier-Stokes equations. Journal of Mathematical Analysis and Applications, 2008, 343, 257-272.	1.0	37
9	Optimal Control of the Classical Two-Phase Stefan Problem in Level Set Formulation. SIAM Journal of Scientific Computing, 2011, 33, 342-363.	2.8	37
10	Approximation of sparse controls in semilinear equations by piecewise linear functions. Numerische Mathematik, 2012, 122, 645-669.	1.9	34
11	Evaluating Gradients in Optimal Control: Continuous Adjoints Versus Automatic Differentiation. Journal of Optimization Theory and Applications, 2004, 122, 63-86.	1.5	31
12	Analysis of Spatio-Temporally Sparse Optimal Control Problems of Semilinear Parabolic Equations. ESAIM - Control, Optimisation and Calculus of Variations, 2017, 23, 263-295.	1.3	30
13	Numerical simulation of segmentation cracking in thermal barrier coatings by means of cohesive zone elements. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 412, 241-251.	5.6	27
14	Optimal Control for a Stationary MHD System in Velocity-Current Formulation. SIAM Journal on Control and Optimization, 2006, 45, 1822-1845.	2.1	26
15	C-Stationarity for Optimal Control of Static Plasticity with Linear Kinematic Hardening. SIAM Journal on Control and Optimization, 2012, 50, 3052-3082.	2.1	24
16	Discrete Total Variation with Finite Elements and Applications to Imaging. Journal of Mathematical Imaging and Vision, 2019, 61, 411-431.	1.3	24
17	Intrinsic Formulation of KKT Conditions and Constraint Qualifications on Smooth Manifolds. SIAM Journal on Optimization, 2019, 29, 2423-2444.	2.0	22
18	Optimal sensor placement for joint parameter and state estimation problems in large-scale dynamical systems with applications to thermo-mechanics. Optimization and Engineering, 2018, 19, 591-627.	2.4	19

#	ARTICLE	IF	CITATIONS
19	A fiber orientation-adapted integration scheme for computing the hyperelastic Tucker average for short fiber reinforced composites. Computational Mechanics, 2017, 60, 595-611.	4.0	18
20	Lipschitz stability for elliptic optimal control problems with mixed control-state constraints. Optimization, 2010, 59, 833-849.	1.7	17
21	Implementation of an X-FEM Solver for the Classical Two-Phase Stefan Problem. Journal of Scientific Computing, 2012, 52, 271-293.	2.3	17
22	A model order reduction method for computational homogenization at finite strains on regular grids using hyperelastic laminates to approximate interfaces. Computer Methods in Applied Mechanics and Engineering, 2016, 309, 476-496.	6.6	17
23	Parametric sensitivities for optimal control problems using automatic differentiation. Optimal Control Applications and Methods, 2003, 24, 297-314.	2.1	15
24	Superlinear Convergence of Krylov Subspace Methods for Self-Adjoint Problems in Hilbert Space. SIAM Journal on Numerical Analysis, 2015, 53, 1304-1324.	2.3	15
25	First and Second Order Shape Optimization Based on Restricted Mesh Deformations. SIAM Journal of Scientific Computing, 2020, 42, A1200-A1225.	2.8	15
26	Parametric sensitivity analysis in optimal control of a reaction-diffusion system – part II: practical methods and examples. Optimization Methods and Software, 2004, 19, 217-242.	2.4	14
27	Numerical Sensitivity Analysis for the Quantity of Interest in PDE-Constrained Optimization. SIAM Journal of Scientific Computing, 2007, 29, 22-48.	2.8	14
28	Optimal control of an elastic crane-trolley-load system - a case study for optimal control of coupled ODE-PDE systems. Mathematical and Computer Modelling of Dynamical Systems, 2018, 24, 182-206.	2.2	13
29	Optimal control of static plasticity with linear kinematic hardening. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2011, 91, 777-794.	1.6	12
30	Sequentially optimal sensor placement in thermoelastic models for real time applications. Optimization and Engineering, 2015, 16, 737-766.	2.4	11
31	Optimal control of a system of reaction-diffusion equations modeling the wine fermentation process. Optimal Control Applications and Methods, 2017, 38, 112-132.	2.1	10
32	Comparison of model order reduction methods for optimal sensor placement for thermo-elastic models. Engineering Optimization, 2019, 51, 465-483.	2.6	10
33	Annular and sectorial sparsity in optimal control of elliptic equations. Computational Optimization and Applications, 2015, 62, 157-180.	1.6	9
34	Parameter identification for short fiber-reinforced plastics using optimal experimental design. International Journal for Numerical Methods in Engineering, 2017, 110, 703-725.	2.8	9
35	Primal-dual methods for the computation of trading regions under proportional transaction costs. Mathematical Methods of Operations Research, 2013, 77, 101-130.	1.0	8
36	Optimal Control Problems in Finite-Strain Elasticity by Inner Pressure and Fiber Tension. Frontiers in Applied Mathematics and Statistics, 2016, 2, .	1.3	8

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37	Optimal Control of Static Elastoplasticity in Primal Formulation. SIAM Journal on Control and Optimization, 2016, 54, 3016-3039.	2.1	8
38	Existence of solutions of a thermoviscoplastic model and associated optimal control problems. Nonlinear Analysis: Real World Applications, 2017, 35, 75-101.	1.7	8
39	Lipschitz Stability of Solutions to Some State-Constrained Elliptic Optimal Control Problems. Zeitschrift Fur Analysis Und Ihre Anwendung, 2006, 25, 435-455.	0.6	8
40	Parametric Sensitivity Analysis of Perturbed PDE Optimal Control Problems with State and Control Constraints. Journal of Optimization Theory and Applications, 2006, 131, 17-35.	1.5	7
41	Analysis and an Interior-Point Approach for TV Image Reconstruction Problems on Smooth Surfaces. SIAM Journal on Imaging Sciences, 2018, 11, 889-922.	2.2	7
42	An Optimal Control Problem for a Rotating Elastic Crane-Trolley-Load System. IFAC-PapersOnLine, 2018, 51, 272-277.	0.9	7
43	Fenchel Duality Theory and a Primal-Dual Algorithm on Riemannian Manifolds. Foundations of Computational Mathematics, 2021, 21, 1465-1504.	2.5	7
44	Existence and regularity of the plastic multiplier in static and quasistatic plasticity. GAMM Mitteilungen, 2011, 34, 39-44.	5.5	6
45	Weak lower semi-continuity of the optimal value function and applications to worst-case robust optimal control problems. Optimization, 2012, 61, 685-697.	1.7	6
46	Optimum Experimental Design by Shape Optimization of Specimens in Linear Elasticity. SIAM Journal on Applied Mathematics, 2018, 78, 1553-1576.	1.8	6
47	Fast iterative solvers for an optimal transport problem. Advances in Computational Mathematics, 2019, 45, 495-517.	1.6	6
48	A Modified Implementation of MINRES to Monitor Residual Subvector Norms for Block Systems. SIAM Journal of Scientific Computing, 2017, 39, A2645-A2663.	2.8	5
49	Update strategies for perturbed nonsmooth equations. Optimization Methods and Software, 2008, 23, 321-343.	2.4	4
50	Modelling of a magnetohydrodynamics free surface problem arising in Czochralski crystal growth. Mathematical and Computer Modelling of Dynamical Systems, 2009, 15, 163-175.	2.2	4
51	OPTPDE: A Collection of Problems in PDE-Constrained Optimization. International Series of Numerical Mathematics, 2014, , 539-543.	1.1	4
52	Quantitative stability analysis of optimal solutions in PDE-constrained optimization. Journal of Computational and Applied Mathematics, 2007, 206, 908-926.	2.0	3
53	A robustification approach in unconstrained quadratic optimization. Mathematical Programming, 2011, 128, 231-252.	2.4	3
54	Preconditioned Solution of State Gradient Constrained Elliptic Optimal Control Problems. SIAM Journal on Numerical Analysis, 2016, 54, 688-718.	2.3	3

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55	A conjugate direction method for linear systems in Banach spaces. Journal of Inverse and Ill-Posed Problems, 2017, 25, 553-572.	1.0	3
56	fiberGen: An introductory tool for FFT-based material homogenization. Journal of Open Source Software, 2019, 4, 1027.	4.6	3
57	Optimal Control of Elastoplastic Processes: Analysis, Algorithms, Numerical Analysis and Applications. International Series of Numerical Mathematics, 2014, , 27-41.	1.1	3
58	Differential Stability of Control-Constrained Optimal Control Problems for the Navier-Stokes Equations. Numerical Functional Analysis and Optimization, 2005, 26, 829-850.	1.4	2
59	Introduction to the special issue for EUCCO 2013. Computational Optimization and Applications, 2015, 62, 1-3.	1.6	2
60	Simulation-based Correction Approach for Thermo-elastic Workpiece Deformations During Milling Processes. Procedia CIRP, 2016, 46, 103-106.	1.9	2
61	Optimal Experimental Design to Identify the Average Stress-Strain Response in Short Fiber-Reinforced Plastics. Proceedings in Applied Mathematics and Mechanics, 2016, 16, 673-674.	0.2	2
62	2. Improving Policies For Hamilton-Jacobi-Bellman Equations By Postprocessing. , 2018, , 25-42.		2
63	Discrete total variation of the normal vector field as shape prior with applications in geometric inverse problems. Inverse Problems, 2020, 36, 054003.	2.0	2
64	Error estimation for second-order partial differential equations in nonvariational form. Numerical Methods for Partial Differential Equations, 2021, 37, 2190-2221.	3.6	2
65	Planning of Measurement Series for Thermodynamic Properties Based on Optimal Experimental Design. International Journal of Thermophysics, 2021, 42, 1.	2.1	2
66	Dimensionally Consistent Preconditioning for Saddle-Point Problems. Computational Methods in Applied Mathematics, 2021, 21, 593-607.	0.8	2
67	Total variation of the normal vector field as shape prior. Inverse Problems, 2020, 36, 054004.	2.0	2
68	On the interplay between interior point approximation and parametric sensitivities in optimal control. Journal of Mathematical Analysis and Applications, 2008, 337, 771-793.	1.0	1
69	Sensitivity analysis and the adjoint update strategy for an optimal control problem with mixed control-state constraints. Computational Optimization and Applications, 2009, 44, 57-81.	1.6	1
70	Comparison of Two Suboptimal Sensor Placement Strategies in Thermo-Elastic Models. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 881-882.	0.2	1
71	Topology Optimization for Injection Molding of Short Fiber-Reinforced Plastics. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 337-338.	0.2	1
72	Shape optimization: what to do first, optimize or discretize?. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900067.	0.2	1

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73	Optimal Sensor Placement for Thermo-Elastic Coupled Machine Models. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000255.	0.2	1
74	FETI-DP Methods for Optimal Control Problems. Lecture Notes in Computational Science and Engineering, 2014, , 387-395.	0.3	1
75	Approximation of Sparse Controls in Semilinear Elliptic Equations. Lecture Notes in Computer Science, 2012, , 16-27.	1.3	1
76	Modeling of directional uncertainty using moments of the angular central Gaussian. Proceedings in Applied Mathematics and Mechanics, 2021, 21, .	0.2	1
77	Scalability of a FETI-DP Method for Optimal Control Problems. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 837-838.	0.2	0
78	Optimal Control of Large Deformation Elasticity by Fiber Tension. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 879-880.	0.2	0
79	Towards Topology Optimization in Quasi-Static Elastoplasticity. IFAC-PapersOnLine, 2015, 48, 627-628.	0.9	0
80	Preface of the Guest Editors. GAMM Mitteilungen, 2018, 40, 156-156.	5.5	0
81	Geometry Processing Problems Using the Total Variation of the Normal Vector Field. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900189.	0.2	0
82	Optimum Experimental Design for Interface Identification Problems. SIAM Journal of Scientific Computing, 2019, 41, A3498-A3523.	2.8	0
83	An extension of the strain transfer principle for fiber reinforced materials. Computational Mechanics, 2021, 67, 1453-1463.	4.0	0
84	Optimal sensor placement for stochastic sources in machine tools. Proceedings in Applied Mathematics and Mechanics, 2021, 21, .	0.2	0