

Christian Kirches

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

52
papers

1,577
citations

14
h-index

39
g-index

53
ext. papers

1,934
ext. citations

2.9
avg, IF

4.93
L-index

#	Paper	IF	Citations
52	qpOASES: a parametric active-set algorithm for quadratic programming. <i>Mathematical Programming Computation</i> , 2014 , 6, 327-363	7.8	598
51	Mixed-integer nonlinear optimization* <i>Acta Numerica</i> , 2013 , 22, 1-131	15.1	376
50	A Reactive Walking Pattern Generator Based on Nonlinear Model Predictive Control. <i>IEEE Robotics and Automation Letters</i> , 2017 , 2, 10-17	4.2	63
49	Combinatorial integral approximation. <i>Mathematical Methods of Operations Research</i> , 2011 , 73, 363-380	1	53
48	Time-optimal control of automobile test drives with gear shifts. <i>Optimal Control Applications and Methods</i> , 2010 , 31, 137-153	1.7	52
47	Efficient direct multiple shooting for nonlinear model predictive control on long horizons. <i>Journal of Process Control</i> , 2012 , 22, 540-550	3.9	48
46	Fast Numerical Methods for Mixed-Integer Nonlinear Model-Predictive Control 2011 ,		44
45	Efficient multiple objective optimal control of dynamic systems with integer controls. <i>Journal of Process Control</i> , 2010 , 20, 810-822	3.9	30
44	Optimal control for whole-body motion generation using center-of-mass dynamics for predefined multi-contact configurations 2015 ,		22
43	A factorization with update procedures for a KKT matrix arising in direct optimal control. <i>Mathematical Programming Computation</i> , 2011 , 3, 319-348	7.8	20
42	Block-structured quadratic programming for the direct multiple shooting method for optimal control. <i>Optimization Methods and Software</i> , 2011 , 26, 239-257	1.3	20
41	Numerical solution of optimal control problems with explicit and implicit switches. <i>Optimization Methods and Software</i> , 2018 , 33, 450-474	1.3	18
40	Efficient Numerics for Nonlinear Model Predictive Control 2010 , 339-357		17
39	Mixed-integer NMPC for predictive cruise control of heavy-duty trucks 2013 ,		14
38	Optimal control of Formula 1 race cars in a VDrift based virtual environment. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2011 , 44, 11907-11912		14
37	Determining the optimum cyclic operation of adsorption chillers by a direct method for periodic optimal control. <i>International Journal of Refrigeration</i> , 2011 , 34, 902-913	3.8	14
36	Approximation Properties and Tight Bounds for Constrained Mixed-Integer Optimal Control. <i>SIAM Journal on Control and Optimization</i> , 2020 , 58, 1371-1402	1.9	14

35	Benchmarking model-free and model-based optimal control. <i>Robotics and Autonomous Systems</i> , 2017 , 92, 81-90	3.5	12
34	Improved regularity assumptions for partial outer convexification of mixed-integer PDE-constrained optimization problems. <i>ESAIM - Control, Optimisation and Calculus of Variations</i> , 2020 , 26, 32	1	12
33	Dynamic optimisation of adsorber-bed designs ensuring optimal control. <i>Applied Thermal Engineering</i> , 2017 , 125, 1565-1576	5.8	12
32	Fast Nonlinear Model Predictive Control with an Application in Automotive Engineering. <i>Lecture Notes in Control and Information Sciences</i> , 2009 , 471-480	0.5	12
31	An SR1/BFGS SQP algorithm for nonconvex nonlinear programs with block-diagonal Hessian matrix. <i>Mathematical Programming Computation</i> , 2016 , 8, 435-459	7.8	10
30	On Perspective Functions and Vanishing Constraints in Mixed-Integer Nonlinear Optimal Control 2013 , 387-417		10
29	Fast solution of periodic optimal control problems in automobile test-driving with gear shifts 2008 ,		9
28	MultiDimensional Sum-Up Rounding for Elliptic Control Systems. <i>SIAM Journal on Numerical Analysis</i> , 2020 , 58, 3427-3447	2.4	8
27	The polynomial chaos approach for reachable set propagation with application to chance-constrained nonlinear optimal control under parametric uncertainties. <i>Optimal Control Applications and Methods</i> , 2018 , 39, 471-488	1.7	7
26	TACO: a toolkit for AMPL control optimization. <i>Mathematical Programming Computation</i> , 2013 , 5, 227-265	5.8	7
25	Using Functional Mock-up Units for Nonlinear Model Predictive Control 2012 ,		7
24	Multi-dimensional Sum-Up Rounding using Hilbert curve iterates. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2019 , 19, e201900065	0.2	7
23	trlib: a vector-free implementation of the GLTR method for iterative solution of the trust region problem. <i>Optimization Methods and Software</i> , 2018 , 33, 420-449	1.3	6
22	A switching cost aware rounding method for relaxations of mixed-integer optimal control problems 2019 ,		6
21	Optimal operation of adsorption chillers: First implementation and experimental evaluation of a nonlinear model-predictive-control strategy. <i>Applied Thermal Engineering</i> , 2019 , 149, 1503-1521	5.8	5
20	Mixed-integer optimal control problems with switching costs: a shortest path approach. <i>Mathematical Programming</i> , 2021 , 188, 621-652	2.1	5
19	An Active-Set Method for Quadratic Programming Based On Sequential Hot-Starts. <i>SIAM Journal on Optimization</i> , 2015 , 25, 967-994	2	4
18	Computational Approaches for Mixed Integer Optimal Control Problems with Indicator Constraints. <i>Vietnam Journal of Mathematics</i> , 2018 , 46, 1023-1051	0.5	4

17	Applying Mathematical Optimization Methods to an ACT-R Instance-Based Learning Model. <i>PLoS ONE</i> , 2016 , 11, e0158832	3.7	3
16	Complementary Condensing for the Direct Multiple Shooting Method 2012 , 195-206		3
15	On the relation between MPECs and optimization problems in abs-normal form. <i>Optimization Methods and Software</i> , 2020 , 35, 560-575	1.3	3
14	Efficient Derivative Evaluation for Rigid-Body Dynamics Based on Recursive Algorithms Subject to Kinematic and Loop Constraints 2019 , 3, 619-624		2
13	A phenomenological model of the time course of maximal voluntary isometric contraction force for optimization of complex loading schemes. <i>European Journal of Applied Physiology</i> , 2018 , 118, 2587-2605 ³⁻⁴		2
12	Mixed-Integer Nonlinear PDE-Constrained Optimization for Multi-Modal Chromatography. <i>Operations Research Proceedings: Papers of the Annual Meeting = Vorträge Der Jahrestagung / DGOR</i> , 2020 , 81-87	0.1	1
11	Compactness and convergence rates in the combinatorial integral approximation decomposition. <i>Mathematical Programming</i> , 2021 , 188, 569-598	2.1	1
10	Convergence Analysis and Adaptive Order Selection for the Polynomial Chaos Approach to Direct Optimal Control under Uncertainties. <i>SIAM Journal on Control and Optimization</i> , 2021 , 59, 509-533	1.9	1
9	Switching Cost Aware Rounding for Relaxations of Mixed-Integer Optimal Control Problems: The 2-D Case 2022 , 6, 548-553		1
8	Sequential Linearization Method for Bound-Constrained Mathematical Programs with Complementarity Constraints. <i>SIAM Journal on Optimization</i> , 2022 , 32, 75-99	2	0
7	Mixed-integer optimal control for multimodal chromatography. <i>Computers and Chemical Engineering</i> , 2021 , 153, 107435	4	0
6	Structure-exploiting polynomial chaos for uncertain optimal control problems with sparse derivative generation. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2017 , 17, 717-718	0.2	
5	pySLEQP: A Sequential Linear Quadratic Programming Method Implemented in Python 2017 , 103-113		
4	Comparing Abs-Normal NLPs to MPECs. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2019 , 19, e201900263	0.2	
3	The integrated control deviation of mixed-integer optimal control problems with vanishing constraints. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2021 , 20, e202000022	0.2	
2	Increasing the Reliability of Multi-megawatt Gas Compressors. <i>Mathematics in Industry</i> , 2021 , 7-10	0.2	
1	Decomposition and Approximation for PDE-Constrained Mixed-Integer Optimal Control. <i>International Series of Numerical Mathematics</i> , 2022 , 283-305	0.4	