Thorsten Koch

List of Publications by Year
in descending order

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63	2,299	377584 21	263392 45
papers	citations	h-index	g-index

67	67	67	2042
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Implications, conflicts, and reductions for Steiner trees. Mathematical Programming, 2023, 197, 903-966.	1.6	6
2	Deep learning for spatioâ€temporal supply and demand forecasting in natural gas transmission networks. Energy Science and Engineering, 2022, 10, 1812-1825.	1.9	5
3	A hybrid approach for high precision prediction of gas flows. Energy Systems, 2022, 13, 383-408.	1.8	1
4	On the Exact Solution of Prize-Collecting Steiner Tree Problems. INFORMS Journal on Computing, 2022, 34, 872-889.	1.0	4
5	Variational Bayesian inference for network autoregression models. Computational Statistics and Data Analysis, 2022, 169, 107406.	0.7	6
6	Generative deep learning for decision making in gas networks. Mathematical Methods of Operations Research, 2022, 95, 503-532.	0.4	1
7	Optimal connected subgraphs: Integer programming formulations and polyhedra. Networks, 2022, 80, 314-332.	1.6	2
8	Progress in mathematical programming solvers from 2001 to 2020. EURO Journal on Computational Optimization, 2022, 10, 100031.	1.5	20
9	Viscosity and porosity effects on tangential-discontinuity surface stability in 3D compressible media. Physics of Fluids, 2022, 34, .	1.6	2
10	A review study of functional autoregressive models with application to energy forecasting. Wiley Interdisciplinary Reviews: Computational Statistics, 2021, 13, e1525.	2.1	7
11	Controlling transient gas flow in real-world pipeline intersection areas. Optimization and Engineering, 2021, 22, 687-734.	1.3	7
12	MIPLIB 2017: data-driven compilation of the 6thÂmixed-integer programming library. Mathematical Programming Computation, 2021, 13, 443-490.	3.2	63
13	Implications, Conflicts, and Reductions for Steiner Trees. Lecture Notes in Computer Science, 2021, , 473-487.	1.0	5
14	Optimal Operation of Transient Gas Transport Networks. Optimization and Engineering, 2021, 22, 735-781.	1.3	8
15	The maximum diversity assortment selection problem. Mathematical Methods of Operations Research, 2021, 93, 521-554.	0.4	0
16	Interface stability of compressible fluids in porous media. Physics of Fluids, 2021, 33, .	1.6	8
17	Instability of a tangential discontinuity surface in a three-dimensional compressible medium. Physics of Fluids, 2021, 33, .	1.6	5
18	SCIP-Jack: An Exact High Performance Solver for Steiner Tree Problems in Graphs and Related Problems. , 2021, , 201-223.		4

#	Article	IF	Citations
19	Modeling and forecasting the dynamics of the natural gas transmission network in Germany with the demand and supply balance constraint. Applied Energy, 2020, 278, 115597.	5.1	12
20	Day-ahead high-resolution forecasting of natural gas demand and supply in Germany with a hybrid model. Applied Energy, 2020, 262, 114486.	5.1	28
21	Minimum Cycle Partition with Length Requirements. Lecture Notes in Computer Science, 2020, , 273-282.	1.0	1
22	Reduction techniques for the prize collecting Steiner tree problem and the maximumâ€weight connected subgraph problem. Networks, 2019, 73, 206-233.	1.6	9
23	Combining NP-Hard Reduction Techniques and Strong Heuristics in an Exact Algorithm for the Maximum-Weight Connected Subgraph Problem. SIAM Journal on Optimization, 2019, 29, 369-398.	1.2	12
24	Building Optimal Steiner Trees on Supercomputers by Using up to 43,000 Cores. Lecture Notes in Computer Science, 2019, , 529-539.	1.0	5
25	A system to evaluate gas network capacities: Concepts and implementation. European Journal of Operational Research, 2018, 270, 797-808.	3.5	20
26	Preface: Special issue of MOA 2016. Journal of Global Optimization, 2018, 70, 1-3.	1.1	2
27	Forecasting Natural Gas Flows in Large Networks. Lecture Notes in Computer Science, 2018, , 158-171.	1.0	1
28	From feasibility to improvement to proof: three phases of solving mixed-integer programs. Optimization Methods and Software, 2018, 33, 499-517.	1.6	4
29	Forecasting day-ahead high-resolution natural-gas demand and supply in Germany. Applied Energy, 2018, 228, 1091-1110.	5.1	38
30	Parallel Solvers for Mixed Integer Linear Optimization. , 2018, , 283-336.		16
31	SCIP-Jackâ€”A Solver for STP and Variants with Parallelization Extensions: An Update. Operations Research Proceedings: Papers of the Annual Meeting = VortrÃge Der Jahrestagung / DGOR, 2018, , 191-196.	0.1	4
32	SCIP-Jackâ€”a solver for STP and variants with parallelization extensions. Mathematical Programming Computation, 2017, 9, 231-296.	3.2	38
33	GasLibâ€”A Library of Gas Network Instances. Data, 2017, 2, 40.	1.2	74
34	Solving Open MIP Instances with ParaSCIP on Supercomputers Using up to 80,000 Cores. , 2016, , .		21
35	Valid inequalities for the topology optimization problem in gas network design. OR Spectrum, 2016, 38, 597-631.	2.1	5
36	Validation of nominations in gas network optimization: models, methods, and solutions. Optimization Methods and Software, 2015, 30, 15-53.	1.6	84

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37	Progress in presolving for mixed integer programming. Mathematical Programming Computation, 2015, 7, 367-398.	3.2	33
38	Mathematical optimization for challenging network planning problems in unbundled liberalized gas markets. Energy Systems, 2014, 5, 449-473.	1.8	31
39	Solving Hard MIPLIB2003 Problems with ParaSCIP on Supercomputers: An Update. , 2014, , .		9
40	A hybrid branch-and-bound approach for exact rational mixed-integer programming. Mathematical Programming Computation, 2013, 5, 305-344.	3.2	31
41	How Many Steiner Terminals Can You Connect in 20 Years?. , 2013, , 215-244.		3
42	Progress in Academic Computational Integer Programming. , 2013, , 483-506.		7
43	Could we use a million cores to solve an integer program?. Mathematical Methods of Operations Research, 2012, 76, 67-93.	0.4	35
44	Steiner tree packing revisited. Mathematical Methods of Operations Research, 2012, 76, 95-123.	0.4	5
45	Gas network topology optimization for upcoming market requirements. , 2011, , .		5
46	MIPLIB 2010. Mathematical Programming Computation, 2011, 3, 103-163.	3.2	275
47	An Exact Rational Mixed-Integer Programming Solver. Lecture Notes in Computer Science, 2011, , 104-116.	1.0	26
48	Mathematical methods for physical layout of printed circuit boards: an overview. OR Spectrum, 2008, 30, 453-468.	2.1	12
49	Counting Solutions of Integer Programs Using Unrestricted Subtree Detection. , 2008, , 278-282.		8
50	Constraint Integer Programming: A New Approach to Integrate CP and MIP. , 2008, , 6-20.		90
51	Optimizing the landside operation of a container terminal. OR Spectrum, 2007, 30, 53-75.	2.1	65
52	MIPLIB 2003. Operations Research Letters, 2006, 34, 361-372.	0.5	148
53	UMTS radio network evaluation and optimization beyond snapshots. Mathematical Methods of Operations Research, 2006, 63, 1-29.	0.4	35
54	Mathematik fÃ¼r den Volkssport. Mitteilungen Der Deutschen Mathematiker-Vereinigung, 2006, 14, .	0.0	33

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55	Branching rules revisited. Operations Research Letters, 2005, 33, 42-54.	0.5	327
56	The final NETLIB-LP results. Operations Research Letters, 2004, 32, 138-142.	0.5	35
57	Optimisation Methods for UMTS Radio Network Planning. Operations Research Proceedings: Papers of the Annual Meeting = VortrÃge Der Jahrestagung / DGOR, 2004, , 31-38.	0.1	9
58	Mutant deoxynucleotide carrier is associated with congenital microcephaly. Nature Genetics, 2002, 32, 175-179.	9.4	141
59	SteinLib: An Updated Library on Steiner Tree Problems in Graphs. Combinatorial Optimization, 2001, , 285-325.	0.7	83
60	A Novel Nemaline Myopathy in the Amish Caused by a Mutation in Troponin T1. American Journal of Human Genetics, 2000, 67, 814-821.	2.6	300
61	Regularized Partially Functional Autoregressive Model. SSRN Electronic Journal, 0, , .	0.4	1
62	Modeling Functional Time Series and Mixed-Type Predictors With Partially Functional Autoregressions. Journal of Business and Economic Statistics, 0, , 1-18.	1.8	1
63	Length-constrained cycle partition with an application to UAV routing*. Optimization Methods and Software, 0, , 1-37.	1.6	1