

# Dirk Muller

## List of Publications by Citations

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100  
papers

1,778  
citations

23  
h-index

38  
g-index

120  
ext. papers

2,306  
ext. citations

6.1  
avg, IF

5.63  
L-index

#	Paper	IF	Citations
100	Energy performance gap in refurbished German dwellings: Lesson learned from a field test. <i>Energy and Buildings</i> , <b>2016</b> , 127, 1146-1158	7	142
99	Quantifying the operational flexibility of building energy systems with thermal energy storages. <i>Applied Energy</i> , <b>2016</b> , 181, 140-154	10.7	124
98	TEASER: an open tool for urban energy modelling of building stocks. <i>Journal of Building Performance Simulation</i> , <b>2018</b> , 11, 84-98	2.8	84
97	Analysis of occupants behavior related to the use of windows in German households. <i>Building and Environment</i> , <b>2016</b> , 103, 54-69	6.5	79
96	Development and validation of grey-box models for forecasting the thermal response of occupied buildings. <i>Energy and Buildings</i> , <b>2016</b> , 117, 199-207	7	78
95	Large-scale grid integration of residential thermal energy storages as demand-side flexibility resource: A review of international field studies. <i>Renewable and Sustainable Energy Reviews</i> , <b>2019</b> , 101, 527-547	16.2	77
94	Bidirectional low temperature district energy systems with agent-based control: Performance comparison and operation optimization. <i>Applied Energy</i> , <b>2018</b> , 209, 502-515	10.7	77
93	Demand side management for city districts. <i>Building and Environment</i> , <b>2015</b> , 91, 283-293	6.5	50
92	Comparison of clustering algorithms for the selection of typical demand days for energy system synthesis. <i>Renewable Energy</i> , <b>2018</b> , 129, 570-582	8.1	50
91	5th Generation District Heating: A novel design approach based on mathematical optimization. <i>Applied Energy</i> , <b>2020</b> , 260, 114158	10.7	48
90	Multiphysics Test Bed for Renewable Energy Systems in Smart Homes. <i>IEEE Transactions on Industrial Electronics</i> , <b>2013</b> , 60, 1235-1248	8.9	43
89	Optimal design of energy conversion units and envelopes for residential building retrofits using a comprehensive MILP model. <i>Applied Energy</i> , <b>2017</b> , 185, 1-15	10.7	42
88	Modelling diversity in building occupant behaviour: a novel statistical approach. <i>Journal of Building Performance Simulation</i> , <b>2017</b> , 10, 527-544	2.8	41
87	Energy-efficient HVAC management using cooperative, self-trained, control agents: A real-life German building case study. <i>Applied Energy</i> , <b>2018</b> , 211, 113-125	10.7	37
86	Automated urban energy system modeling and thermal building simulation based on OpenStreetMap data sets. <i>Building and Environment</i> , <b>2019</b> , 149, 630-639	6.5	35
85	A comparison of thermal energy storage models for building energy system optimization. <i>Energy and Buildings</i> , <b>2015</b> , 93, 23-31	7	33
84	Feasibility and potential of thermal demand side management in residential buildings considering different developments in the German energy market. <i>Energy Conversion and Management</i> , <b>2016</b> , 107, 86-95	10.6	30

83	Workflow automation for combined modeling of buildings and district energy systems. <i>Energy</i> , <b>2016</b> , 117, 478-484	7.9	27
82	Cost optimal sizing of smart buildingsVenergy system components considering changing end-consumer electricity markets. <i>Energy</i> , <b>2017</b> , 137, 715-728	7.9	26
81	Data Center Control Strategy for Participation in Demand Response Programs. <i>IEEE Transactions on Industrial Informatics</i> , <b>2018</b> , 14, 5087-5099	11.9	25
80	Real-world application of machine-learning-based fault detection trained with experimental data. <i>Energy</i> , <b>2020</b> , 198, 117323	7.9	24
79	A Modelica library for the agent-based control of building energy systems. <i>Applied Energy</i> , <b>2017</b> , 193, 52-59	10.7	23
78	Automated data-driven modeling of building energy systems via machine learning algorithms. <i>Energy and Buildings</i> , <b>2019</b> , 202, 109384	7	23
77	Application of two promising Reinforcement Learning algorithms for load shifting in a cooling supply system. <i>Energy and Buildings</i> , <b>2020</b> , 229, 110490	7	21
76	A time series clustering approach for Building Automation and Control Systems. <i>Applied Energy</i> , <b>2019</b> , 238, 1337-1345	10.7	20
75	Dynamic modelling and simulation of a slinky-coil horizontal ground heat exchanger using Modelica. <i>Journal of Building Engineering</i> , <b>2018</b> , 16, 159-168	5.2	20
74	Decentralized scheduling strategy of heating systems for balancing the residual load. <i>Building and Environment</i> , <b>2015</b> , 86, 132-140	6.5	20
73	New energy concepts and related information technologies: Dual Demand Side Management <b>2012</b> ,		20
72	A novel hybrid agent-based model predictive control for advanced building energy systems. <i>Energy Conversion and Management</i> , <b>2018</b> , 178, 415-427	10.6	19
71	Exergy-based approaches for performance evaluation of building energy systems. <i>Sustainable Cities and Society</i> , <b>2016</b> , 25, 25-32	10.1	18
70	Dynamic exergy analysis [Modelica]-based tool development: A case study of CHP district heating in Bottrop, Germany. <i>Thermal Science and Engineering Progress</i> , <b>2017</b> , 4, 231-240	3.6	17
69	Optimal design of decentralized energy conversion systems for smart microgrids using decomposition methods. <i>Energy</i> , <b>2018</b> , 156, 250-263	7.9	17
68	WinProGen: A Markov-Chain-based stochastic window status profile generator for the simulation of realistic energy performance in buildings. <i>Building and Environment</i> , <b>2018</b> , 136, 240-258	6.5	16
67	Experimental study of the effect of turbulence intensities on the maximum velocity decay of an attached plane jet. <i>Energy and Buildings</i> , <b>2013</b> , 65, 127-136	7	16
66	Thermal comfort in environments with different vertical air temperature gradients. <i>Indoor Air</i> , <b>2019</b> , 29, 101-111	5.4	15

65	Exergy-based control strategies for the efficient operation of building energy systems. <i>Journal of Cleaner Production</i> , <b>2019</b> , 241, 118277	10.3	14
64	Thermoeconomic analysis of a building heating system. <i>Energy</i> , <b>2016</b> , 111, 351-363	7.9	14
63	Application of the second law of thermodynamics to control: A review. <i>Energy</i> , <b>2019</b> , 174, 938-953	7.9	13
62	The Effect of Furniture and Floor Covering Upon Dynamic Thermal Building Simulations. <i>Energy Procedia</i> , <b>2015</b> , 78, 2154-2159	2.3	13
61	Self-learning model predictive control for dynamic activation of structural thermal mass in residential buildings. <i>Energy and Buildings</i> , <b>2020</b> , 207, 109542	7	13
60	Distributed exergy-based simulation-assisted control of HVAC supply chains. <i>Energy and Buildings</i> , <b>2018</b> , 175, 131-140	7	12
59	Temperature control in 5th generation district heating and cooling networks: An MILP-based operation optimization. <i>Applied Energy</i> , <b>2021</b> , 288, 116608	10.7	12
58	MIP approach for designing heating systems in residential buildings and neighbourhoods. <i>Journal of Building Performance Simulation</i> , <b>2016</b> , 9, 316-330	2.8	11
57	Optimal design of energy conversion units for residential buildings considering German market conditions. <i>Energy</i> , <b>2017</b> , 139, 895-915	7.9	11
56	Real-life implementation of a linear model predictive control in a building energy system. <i>Journal of Building Engineering</i> , <b>2019</b> , 22, 451-463	5.2	11
55	Quantifying Demand Balancing in Bidirectional Low Temperature Networks. <i>Energy and Buildings</i> , <b>2020</b> , 224, 110245	7	10
54	Influence of data acquisition on the Bayesian calibration of urban building energy models. <i>Energy and Buildings</i> , <b>2021</b> , 230, 110512	7	10
53	Implementation of a solution to the problem of reference environment in the exergy evaluation of building energy systems. <i>Energy</i> , <b>2018</b> , 149, 830-836	7.9	9
52	Selecting statistical indices for calibrating building energy models. <i>Building and Environment</i> , <b>2018</b> , 144, 94-107	6.5	8
51	<b>2013</b> ,		8
50	A combined moving boundary and discretized approach for dynamic modeling and simulation of geothermal heat pump systems. <i>Thermal Science and Engineering Progress</i> , <b>2019</b> , 9, 215-234	3.6	8
49	Identification and utilization of flexibility in non-residential buildings. <i>Energy Procedia</i> , <b>2017</b> , 122, 997-1003	2.3	7
48	Primary energy evaluation of heat pumps considering dynamic boundary conditions in the energy system. <i>Energy</i> , <b>2017</b> , 138, 60-78	7.9	7

47	Consumer benefits of electricity-price-driven heat pump operation in future smart grids <b>2011</b> ,		7
46	Retrofit Solutions for Residential Buildings. <i>International Journal of Sustainable Building Technology and Urban Development</i> , <b>2011</b> , 2, 131-136		7
45	Temperature control of a low-temperature district heating network with Model Predictive Control and Mixed-Integer Quadratically Constrained Programming. <i>Energy</i> , <b>2021</b> , 224, 120140	7.9	7
44	Simulation-based implementation and evaluation of a system of systems optimization algorithm in a building control system <b>2016</b> ,		7
43	Mode and storage load based control of a complex building system with a geothermal field. <i>Energy and Buildings</i> , <b>2018</b> , 158, 1337-1345	7	7
42	Design optimization of multi-energy systems using mixed-integer linear programming: Which model complexity and level of detail is sufficient?. <i>Energy Conversion and Management</i> , <b>2021</b> , 240, 114249	10.6	7
41	Application of selected supervised learning methods for time series classification in Building Automation and Control Systems. <i>Energy Procedia</i> , <b>2017</b> , 122, 943-948	2.3	6
40	Next generation automation architecture for DC smart homes <b>2016</b> ,		6
39	Exergetic Evaluation of Solar Controller Using Software-in-the-Loop Method. <i>Energy Procedia</i> , <b>2014</b> , 48, 850-857	2.3	6
38	Dynamic Modeling, Simulation and Exergy Analysis of an Innovative Hydronic Heating System <b>2013</b> ,		6
37	Modelling long-wave radiation heat exchange for thermal network building simulations at urban scale using Modelica <b>2014</b> ,		6
36	A Platform for the Agent-based Control of HVAC Systems <b>2017</b> ,		6
35	Towards an integrated design of heat pump systems: Application of process intensification using two-stage optimization. <i>Energy Conversion and Management</i> , <b>2021</b> , 250, 114888	10.6	6
34	Monitoring data-driven Reinforcement Learning controller training: A comparative study of different training strategies for a real-world energy system. <i>Energy and Buildings</i> , <b>2021</b> , 239, 110856	7	6
33	COMANDO: A Next-Generation Open-Source Framework for Energy Systems Optimization. <i>Computers and Chemical Engineering</i> , <b>2021</b> , 152, 107366	4	6
32	Model compendium, data, and optimization benchmarks for sector-coupled energy systems. <i>Computers and Chemical Engineering</i> , <b>2020</b> , 135, 106760	4	5
31	Auswirkung von Wärmeverchiebungsvorgängen in energieeffizient sanierten Bestandswohngebäuden. <i>Bauphysik</i> , <b>2016</b> , 38, 19-24	0.4	5
30	Evaluating heat pump system design methods towards a sustainable heat supply in residential buildings. <i>Applied Energy</i> , <b>2022</b> , 308, 118204	10.7	4

29	Application of data-driven methods for energy system modelling demonstrated on an adaptive cooling supply system. <i>Energy</i> , <b>2021</b> , 230, 120894	7.9	4
28	MILP design optimization of heat pump systems in German residential buildings. <i>Energy and Buildings</i> , <b>2021</b> , 249, 111204	7	4
27	Simulation-based design optimization of heat pump systems considering building variations. <i>Energy and Buildings</i> , <b>2021</b> , 251, 111310	7	4
26	Demonstration of an easy-to-apply, automated control tuning method for typical PID control loops in building energy systems <b>2015</b> ,		3
25	A Medium Model for the Refrigerant Propane for Fast and Accurate Dynamic Simulations <b>2014</b> ,		3
24	Potential and Optimal Sizing of Combined Heat and Electrical Storage in Private Households. <i>Energy Procedia</i> , <b>2016</b> , 99, 174-181	2.3	3
23	Optimal scheduling of modernization measures for typical non-residential buildings. <i>Energy</i> , <b>2022</b> , 238, 121871	7.9	3
22	Requirements for flexible districts to provide smart grid demand side services <b>2017</b> ,		2
21	State of the Art of Technologies in Adaptive Dynamic Building Envelopes (ADBEs). <i>Energies</i> , <b>2022</b> , 15, 829	3.1	2
20	Design optimization of a heating network with multiple heat pumps using mixed integer quadratically constrained programming. <i>Energy</i> , <b>2021</b> , 226, 120384	7.9	2
19	Numerical robustness analysis of natural and mechanical smoke extraction systems for buildings. <i>International Journal of Ventilation</i> , <b>2019</b> , 18, 79-95	1.1	2
18	ACoolHead: Framework for Automated Cooling and Heating Demand calculations using spatially and temporally resolved building performance simulations applied to the estimation of heating demand in Germany. <i>Energy and Buildings</i> , <b>2021</b> , 252, 111442	7	2
17	Ancillary services from Data Center HVAC systems and back-up generator sets <b>2016</b> ,		1
16	Validation, optimisation and comparison of carbon dioxide-based occupancy estimation algorithms. <i>Indoor and Built Environment</i> , <b>2020</b> , 29, 820-834	1.8	1
15	Enhancing Building Monitoring and Control for District Energy Systems: Technology Selection and Installation within the Living Lab Energy Campus. <i>Applied Sciences (Switzerland)</i> , <b>2022</b> , 12, 3305	2.6	1
14	Nonlinear Distributed Model Predictive Control for multi-zone building energy systems. <i>Energy and Buildings</i> , <b>2022</b> , 264, 112066	7	1
13	EHDO: A free and open-source webtool for designing and optimizing multi-energy systems based on MILP. <i>Computer Applications in Engineering Education</i> , <b>2020</b> , 29, 983	1.6	0
12	Bidirectional low temperature networks in urban districts: A novel design methodology based on mathematical optimization. <i>Journal of Physics: Conference Series</i> , <b>2019</b> , 1343, 012111	0.3	0

11	Systematische Anwendung des Entscheidungsprozesses zur Arbeitsmittelauswahl für Wärmepumpen. <i>Forschung Im Ingenieurwesen/Engineering Research</i> , <b>2021</b> , 85, 21-38	0.8	○
10	On modelling effects in the battery and thermal storage scheduling problem. <i>Journal of Building Performance Simulation</i> , <b>2021</b> , 14, 38-51	2.8	○
9	Influence of gender, age and BMI on human physiological response and thermal sensation for transient indoor environments with displacement ventilation. <i>Building and Environment</i> , <b>2022</b> , 109045	6.5	○
8	Operational optimization of a 4th generation district heating network with mixed integer quadratically constrained programming. <i>Energy</i> , <b>2022</b> , 250, 123766	7.9	○
7	Modular hydronic subsystem models for testing and improving control algorithms of air-handling units. <i>Journal of Building Engineering</i> , <b>2022</b> , 104439	5.2	○
6	IoT Middleware Platforms for Smart Energy Systems: An Empirical Expert Survey. <i>Buildings</i> , <b>2022</b> , 12, 526	3.2	○
5	Energy and Comfort Model for Automobile Interior Spaces. <i>ATZ Worldwide</i> , <b>2011</b> , 113, 10-15	0.1	
4	A tool for automated detection of hidden operation modes in building energy systems. <i>Journal of Physics: Conference Series</i> , <b>2021</b> , 2042, 012071	0.3	
3	Self-adjusting model predictive control for modular subsystems in HVAC systems. <i>Journal of Physics: Conference Series</i> , <b>2021</b> , 2042, 012037	0.3	
2	Distributed model predictive control of building energy systems coupled to geothermal fields. <i>Journal of Physics: Conference Series</i> , <b>2019</b> , 1343, 012074	0.3	
1	Comparative study of supervised algorithms for topology detection of sensor networks in building energy systems. <i>Automation in Construction</i> , <b>2022</b> , 138, 104248	9.6	