Michael Wetter

List of Publications by Citations

61 papers	2,033 citations	23 h-index	44 g-index
69 ext. papers	2,553 ext. citations	5.9 avg, IF	5.49 L-index

#	Paper	IF	Citations
61	Co-simulation of building energy and control systems with the Building Controls Virtual Test Bed. *Journal of Building Performance Simulation*, **2011**, 4, 185-203	2.8	239
60	Modelica Buildings library. *Journal of Building Performance Simulation*, **2014**, 7, 253-270	2.8	214
59	A comparison of deterministic and probabilistic optimization algorithms for nonsmooth simulation-based optimization. *Building and Environment*, **2004**, 39, 989-999	6.5	191
58	All you need to know about model predictive control for buildings. *Annual Reviews in Control*, **2020**, 50, 190-232	10.3	104
57	Modelica-based modelling and simulation to support research and development in building energy and control systems. *Journal of Building Performance Simulation*, **2009**, 2, 143-161	2.8	102
56	Robust on-line fault detection diagnosis for HVAC components based on nonlinear state estimation techniques. *Applied Energy*, **2014**, 124, 156-166	10.7	88
55	A framework for simulation-based real-time whole building performance assessment. *Building and Environment*, **2012**, 54, 100-108	6.5	79
54	Bidirectional low temperature district energy systems with agent-based control: Performance comparison and operation optimization. *Applied Energy*, **2018**, 209, 502-515	10.7	77
53	Dynamic equation-based thermo-hydraulic pipe model for district heating and cooling systems. *Energy Conversion and Management*, **2017**, 151, 158-169	10.6	74
52	Equation-based languages A new paradigm for building energy modeling, simulation and optimization. *Energy and Buildings*, **2016**, 117, 290-300	7	60
51	Determinate composition of FMUs for co-simulation **2013**,		59
50	Co-simulation of innovative integrated HVAC systems in buildings. *Journal of Building Performance Simulation*, **2009**, 2, 209-230	2.8	56
49	A comparison of global optimization algorithms with standard benchmark functions and real-world applications using EnergyPlus. *Journal of Building Performance Simulation*, **2010**, 3, 103-120	2.8	55
48	Functional mock-up unit for co-simulation import in EnergyPlus. *Journal of Building Performance Simulation*, **2014**, 7, 192-202	2.8	53
47	Practical factors of envelope model setup and their effects on the performance of model predictive control for building heating, ventilating, and air conditioning systems. *Applied Energy*, **2019**, 236, 410-425	10.7	40
46	A thermodynamic analysis of a novel bidirectional district heating and cooling network. *Energy*, **2018**, 144, 20-30	7.9	38
45	Building design optimization using a convergent pattern search algorithm with adaptive precision simulations. *Energy and Buildings*, **2005**, 37, 603-612	7	35

44	The reservoir network: A new network topology for district heating and cooling. *Energy*, **2020**, 199, 117418	7.9	33
43	Co-simulation for performance prediction of integrated building and HVAC systems An analysis of solution characteristics using a two-body system. *Simulation Modelling Practice and Theory*, **2010**, 18, 957-970	3.9	33
42	Coupling indoor airflow, HVAC, control and building envelope heat transfer in the Modelica Buildings library. *Journal of Building Performance Simulation*, **2016**, 9, 366-381	2.8	30
41	Requirements for hybrid cosimulation standards **2015**,		27
40	. *Proceedings of the IEEE*, **2016**, 104, 789-806	14.3	26
39	A convergent optimization method using pattern search algorithms with adaptive precision simulation. *Building Services Engineering Research and Technology*, **2004**, 25, 327-338	2.3	24
38	Energy saving potential of a two-pipe system for simultaneous heating and cooling of office buildings. *Energy and Buildings*, **2017**, 134, 234-247	7	20
37	Intelligent Building Energy Information and Control Systems for Low-Energy Operations and Optimal Demand Response. *IEEE Design and Test of Computers*, **2012**, 29, 8-16		20
36	Precision Control for Generalized Pattern Search Algorithms with Adaptive Precision Function Evaluations. *SIAM Journal on Optimization*, **2006**, 16, 650-669	2	20
35	Equation-based object-oriented modeling and simulation for data center cooling: A case study. *Energy and Buildings*, **2019**, 186, 108-125	7	19
34	Building energy simulation in real time through an open standard interface. *Energy and Buildings*, **2016**, 117, 282-289	7	14
33	Modeling and simulating cyber-physical systems using CyPhySim **2015**,		14
32	BuildOpt new building energy simulation program that is built on smooth models. *Building and Environment*, **2005**, 40, 1085-1092	6.5	14
31	Hardware-in-the-Loop co-simulation of distribution Grid for demand response **2016**,		11
30	Equation-based object-oriented modeling and simulation of data center cooling systems. *Energy and Buildings*, **2019**, 198, 503-519	7	11
29	Comparing computer run time of building simulation programs. *Building Simulation*, **2008**, 1, 210-213	3.9	11
28	Recent Developments of the Modelica "Buildings" Library for Building Energy and Control Systems **2011**,		11
27	Acceleration of the matrix multiplication of Radiance three phase daylighting simulations with parallel computing on heterogeneous hardware of personal computer. *Journal of Building Performance Simulation*, **2014**, 7, 152-163	2.8	10

26	Modelica Library for Building Heating, Ventilation and Air-Conditioning Systems **2009**,		10
25	CyPhySim **2015**,		8
24	IBPSA Project 1: BIM/GIS and Modelica framework for building and community energy system design and operation ongoing developments, lessons learned and challenges. *IOP Conference Series: Earth and Environmental Science*, **2019**, 323, 012114	0.3	8
23	Fast and self-learning indoor airflow simulation based on in situ adaptive tabulation. *Journal of Building Performance Simulation*, **2018**, 11, 99-112	2.8	7
22	Modeling of Heat Transfer in Rooms in the Modelica "Buildings" Library		7
21	ModestPy: An Open-Source Python Tool for Parameter Estimation in Functional Mock-up Units **2019**,		6
20	Building optimization testing framework (BOPTEST) for simulation-based benchmarking of control strategies in buildings. *Journal of Building Performance Simulation*, **2021**, 14, 586-610	2.8	6
19	Vocabulary for the fourth generation of district heating and cooling. *Smart Energy*, **2021**, 1, 100003		6
18	CyDER an FMI-based co-simulation platform for distributed energy resources. *Journal of Building Performance Simulation*, **2019**, 12, 566-579	2.8	5
17	Simplifications for hydronic system models in modelica. *Journal of Building Performance Simulation*, **2018**, 11, 639-654	2.8	5
16	Generalized pattern search algorithms with adaptive precision function evaluations		5
15	Tool coupling for the design and operation of building energy and control systems based on the Functional Mock-up Interface standard **2014**,		5
14	Simulation Speed Analysis and Improvements of Modelica Models for Building Energy Simulation **2015**,		4
13	Modelling of Heat Pumps with Calibrated Parameters Based on Manufacturer Data **2017**,		4
12	Novel simulation concepts for buildings and community energy systems based on the Functional Mock-up Interface specification **2014**,		3
11	Estimating ASHRAE Guideline 36 energy savings for multi-zone variable air volume systems using Spawn of EnergyPlus. *Journal of Building Performance Simulation*, **2022**, 15, 215-236	2.8	3
10	Modelica-based modeling and simulation of district cooling systems: A case study. *Applied Energy*, **2022**, 311, 118654	10.7	3
9	CyDER - A Co-Simulation Platform for Grid Analysis and Planning for High Penetration of Distributed Energy Resources **2018**,		3

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8	OpenBuildingControl: Digitizing the control delivery from building energy modeling to specification, implementation and formal verification. *Energy*, **2022**, 238, 121501	7.9	3
7	Field demonstration and implementation analysis of model predictive control in an office HVAC system. *Applied Energy*, **2022**, 318, 119104	10.7	3
6	Prototyping The BOPTEST Framework For Simulation-Based Testing Of Advanced Control Strategies In Buildings		2
5	Development and Verification of Control Sequences for Single-Zone Variable Air Volume System Based on ASHRAEGuideline 36 **2020**,		2
4	Design Choices for Thermofluid Flow Components and Systems that are Exported as Functional Mockup Units **2015**,		2
3	BacNet and Analog/Digital Interfaces of the Building Controls Virtual Testbed		2
2	An FMI-based Framework for State and Parameter Estimation **2014**,		2
1	A fast and accurate modeling approach for water and steam thermodynamics with practical applications in district heating system simulation. *Energy*, **2022**, 124227	7.9	0