CFD analysis of transpirational cooling by vegetation: C meteorological conditions during a heat wave in Arnhei

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Citation Report

#	Article	IF	Citations
1	How cities can beat the heat. Nature, 2015, 524, 402-404.	13.7	45
2	Building neighborhood emerging properties and their impacts on multi-scale modeling of building energy and airflows. Building and Environment, 2015, 91, 246-262.	3.0	77
3	An indirect validation of convective heat transfer coefficients (CHTCs) for external building surfaces in an actual urban environment. Building Simulation, 2015, 8, 337-352.	3.0	20
4	Coupled CFD, radiation and building energy model for studying heat fluxes in an urban environment with generic building configurations. Sustainable Cities and Society, 2015, 19, 385-394.	5.1	80
5	CFD simulations of the effect of evaporative cooling from water bodies in a micro-scale urban environment: Validation and application studies. Sustainable Cities and Society, 2015, 19, 259-270.	5.1	75
6	CFD simulation of outdoor ventilation of generic urban configurations with different urban densities and equal and unequal street widths. Building and Environment, 2015, 92, 152-166.	3.0	257
7	Computational Fluid Dynamics for urban physics: Importance, scales, possibilities, limitations and ten tips and tricks towards accurate and reliable simulations. Building and Environment, 2015, 91, 219-245.	3.0	661
8	Impacts of mesic and xeric urban vegetation on outdoor thermal comfort and microclimate in Phoenix, AZ. Building and Environment, 2015, 94, 558-568.	3.0	62
9	CFD simulation of wind flow over natural complex terrain: Case study with validation by field measurements for Ria de Ferrol, Galicia, Spain. Journal of Wind Engineering and Industrial Aerodynamics, 2015, 147, 43-57.	1.7	112
10	Reprint of: On the predicted effectiveness of climate adaptation measures for residential buildings. Building and Environment, 2015, 83, 142-158.	3.0	45
11	Influence of avenue-trees on air quality at the urban neighborhood scale. Part I: Quality assurance studies and turbulent Schmidt number analysis for RANS CFD simulations. Environmental Pollution, 2015, 196, 214-223.	3.7	117
12	Overview of challenges and achievements in the climate adaptation of cities and in the Climate Proof Cities program. Building and Environment, 2015, 83, 1-10.	3.0	55
13	Sustainable Buildings: opportunities, challenges, aims and vision. Sustainable Buildings, 2016, 1, E1.	0.7	1
14	Reduction of outdoor particulate matter concentrations by local removal in semi-enclosed parking garages: A preliminary case study for Eindhoven city center. Journal of Wind Engineering and Industrial Aerodynamics, 2016, 159, 80-98.	1.7	63
15	Comfort and buildings: climate change vulnerability and strategies. International Journal of Climate Change Strategies and Management, 2016, 8, 670-688.	1.5	7
16	Embedded large eddy simulation approach for pollutant dispersion around a model building in atmospheric boundary layer. Environmental Fluid Mechanics, 2016, 16, 575-601.	0.7	16
17	On detailed thermal response modeling of vertical greenery systems as cooling measure for buildings and cities in summer conditions. Energy, 2016, 115, 1055-1068.	4.5	48
18	Water retention, wash-out, substrate and surface temperatures of extensive green roof mesocosmsâ€"Results from a two year study in SW-Germany. Ecological Engineering, 2016, 94, 503-515.	1.6	16

#	Article	IF	Citations
19	A simplified assessment of how tree allocation, wind environment, and shading affect human comfort. Urban Forestry and Urban Greening, 2016, 18, 126-137.	2.3	68
20	Analysis of the predicted effect of passive climate adaptation measures on energy demand for cooling and heating in a residential building. Energy, 2016, 94, 811-820.	4.5	97
22	A new model of urban cooling demand and heat islandâ€"application to vertical greenery systems (VGS). Energy and Buildings, 2017, 157, 204-217.	3.1	49
23	Numerical simulation of cooling effect of vegetation enhancement in a subtropical urban park. Applied Energy, 2017, 192, 178-200.	5.1	65
24	A neighbourhood-scale estimate for the cooling potential of green roofs. Urban Climate, 2017, 20, 33-45.	2.4	14
25	The Urban Heat Island: Thermal Comfort and the Role of Urban Greening. Future City, 2017, , 7-19.	0.2	19
26	A review on the CFD analysis of urban microclimate. Renewable and Sustainable Energy Reviews, 2017, 80, 1613-1640.	8.2	398
27	Urban Greening and Microclimate Modification. Advances in 21st Century Human Settlements, 2017, , 73-93.	0.3	10
28	Simulating the cooling effects of water spray systems in urban landscapes: A computational fluid dynamics study in Rotterdam, The Netherlands. Landscape and Urban Planning, 2017, 159, 85-100.	3.4	72
29	Within canopy temperature differences and cooling ability of Tilia cordata trees grown in urban conditions. Building and Environment, 2017, 114, 118-128.	3.0	119
30	Coupled CFD and building energy simulations for studying the impacts of building height topology and buoyancy on local urban microclimates. Urban Climate, 2017, 21, 278-305.	2.4	67
31	Benefits of green roofs: A systematic review of the evidence for three ecosystem services. Urban Forestry and Urban Greening, 2017, 28, 167-176.	2.3	138
32	A numerical investigation of reactive air pollutant dispersion in urban street canyons with tree planting. Atmospheric Pollution Research, 2017, 8, 253-266.	1.8	56
33	An Approach on the Correlation between Urban Morphological Parameters and Ventilation Performance. Energy Procedia, 2017, 142, 2884-2891.	1.8	10
34	Could/should improving the urban climate in informal areas of fast-growing cities be an integral part of upgrading processes? Cairo case. Urban Climate, 2018, 24, 63-79.	2.4	23
35	Urban Green Infrastructure as a tool for urban heat mitigation: Survey of research methodologies and findings across different climatic regions. Urban Climate, 2018, 24, 94-110.	2.4	146
36	The effect of an urban park on the microclimate in its vicinity: a case study for Antwerp, Belgium. International Journal of Climatology, 2018, 38, e303.	1.5	48
37	Identifying outdoor thermal risk areas and evaluation of future thermal comfort concerning shading orientation in a traditional settlement. Science of the Total Environment, 2018, 626, 567-580.	3.9	32

3

#	Article	IF	Citations
38	Evaluating the cooling effects of green infrastructure: A systematic review of methods, indicators and data sources. Solar Energy, 2018, 166, 486-508.	2.9	179
39	Review on urban tree modelling in CFD simulations: Aerodynamic, deposition and thermal effects. Urban Forestry and Urban Greening, 2018, 31, 212-220.	2.3	135
40	Evaluating the performance of ENVI-met model in diurnal cycles for different meteorological conditions. Theoretical and Applied Climatology, 2018, 131, 455-469.	1.3	82
41	A numerical study of reactive pollutant dispersion in street canyons with green roofs. Building Simulation, 2018, 11, 125-138.	3.0	21
42	Simulations of local heat islands in ZÃ $^1\!\!/\!\!4$ rich with coupled CFD and building energy models. Urban Climate, 2018, 24, 340-359.	2.4	60
43	Parametric study of the influence of environmental factors and tree properties on the transpirative cooling effect of trees. Agricultural and Forest Meteorology, 2018, 248, 259-274.	1.9	79
44	Impacts of urban morphology on reducing cooling load and increasing ventilation potential in hot-arid climate. Applied Energy, 2018, 231, 714-746.	5.1	112
45	A method to partition the relative effects of evaporative cooling and shading on air temperature within vegetation canopy. Journal of Urban Ecology, 2018, 4, .	0.6	18
46	Impact of passive climate adaptation measures and building orientation on the energy demand of a detached lightweight semi-portable building. Building Simulation, 2018, 11, 1163-1177.	3.0	17
47	Where the people are: Current trends and future potential targeted investments in urban trees for PM10 and temperature mitigation in 27 U.S. Cities. Landscape and Urban Planning, 2018, 177, 227-240.	3.4	41
48	Facing the urban overheating: Recent developments. Mitigation potential and sensitivity of the main technologies. Wiley Interdisciplinary Reviews: Energy and Environment, 2018, 7, e294.	1.9	21
49	Cooling Effect of Urban Trees on the Built Environment of Contiguous United States. Earth's Future, 2018, 6, 1066-1081.	2.4	91
50	Impact of urban microclimate on summertime building cooling demand: A parametric analysis for Antwerp, Belgium. Applied Energy, 2018, 228, 852-872.	5.1	75
51	LES over RANS in building simulation for outdoor and indoor applications: A foregone conclusion?. Building Simulation, 2018, 11, 821-870.	3.0	297
52	Reprint of: Review on urban tree modelling in CFD simulations: Aerodynamic, deposition and thermal effects. Urban Forestry and Urban Greening, 2019, 37, 56-64.	2.3	22
53	Green roofs to reduce building energy use? A review on key structural factors of green roofs and their effects on urban climate. Building and Environment, 2019, 162, 106273.	3.0	106
54	Sustainable design of vegetated structures: Building freshness. IOP Conference Series: Earth and Environmental Science, 2019, 323, 012021.	0.2	0
55	The Effects of the Layouts of Vegetation and Wind Flow in an Apartment Housing Complex to Mitigate Outdoor Microclimate Air Temperature. Sustainability, 2019, 11, 3081.	1.6	12

#	Article	IF	CITATIONS
56	The use of water irrigation to mitigate ambient overheating in the built environment: Recent progress. Building and Environment, 2019, 164, 106346.	3.0	24
57	CFD simulation of urban microclimate: Validation using high-resolution field measurements. Science of the Total Environment, 2019, 695, 133743.	3.9	112
58	Assessing the thermal comfort effects of green spaces: A systematic review of methods, parameters, and plants' attributes. Sustainable Cities and Society, 2019, 49, 101634.	5.1	93
59	CFD simulation of the near-neutral atmospheric boundary layer: New temperature inlet profile consistent with wall functions. Journal of Wind Engineering and Industrial Aerodynamics, 2019, 191, 91-102.	1.7	18
60	Numerical Investigation of the Wind and Thermal Conditions in Sky Gardens in High-Rise Buildings. Energies, 2019, 12, 1380.	1.6	11
61	Developing the Urban Thermal Environment Management and Planning (UTEMP) System to Support Urban Planning and Design. Sustainability, 2019, 11, 2224.	1.6	4
62	The Effect of Tree-Planting Patterns on the Microclimate within a Courtyard. Sustainability, 2019, 11, 1665.	1.6	19
63	Using a Gaussian process regression inspired method to measure agreement between the experiment and CFD simulations. International Journal of Heat and Fluid Flow, 2019, 80, 108497.	1.1	20
64	Green Façade Effects on Thermal Environment in Transitional Space: Field Measurement Studies and Computational Fluid Dynamics Simulations. Sustainability, 2019, 11, 5691.	1.6	17
65	Capturing the true value of trees, cool roofs, and other urban heat island mitigation strategies for utilities. Energy Efficiency, 2020, 13, 407-418.	1.3	8
66	Tree transpiration in a multi-species Mediterranean garden. Agricultural and Forest Meteorology, 2020, 280, 107767.	1.9	14
67	Research on water thermal effect on surrounding environment in summer. Energy and Buildings, 2020, 207, 109613.	3.1	21
68	Quantifying the cooling effect of urban vegetation by mobile traverse method: A local-scale urban heat island study in a subtropical megacity. Building and Environment, 2020, 169, 106541.	3.0	59
69	Influence of Wind Buffers on the Aero-Thermal Performance of Skygardens. Fluids, 2020, 5, 160.	0.8	10
70	Numerical simulation of air pollution mitigation by means of photocatalytic coatings in real-world street canyons. Building and Environment, 2020, 186, 107348.	3.0	7
71	Statistical Review of Quality Parameters of Blue-Green Infrastructure Elements Important in Mitigating the Effect of the Urban Heat Island in the Temperate Climate (C) Zone. International Journal of Environmental Research and Public Health, 2020, 17, 7093.	1.2	29
72	A numerical study of the impact of vegetation on mean and turbulence fields in a European-city neighbourhood. Building and Environment, 2020, 186, 107293.	3.0	17
73	Wind load prediction on single tree with integrated approach of L-system fractal model, wind tunnel, and tree aerodynamic simulation. AIP Advances, 2020, 10 , .	0.6	9

#	ARTICLE	IF	CITATIONS
74	COSMO-BEP-Tree v1.0: a coupled urban climate model with explicit representation of street trees. Geoscientific Model Development, 2020, 13 , $1685-1710$.	1.3	37
75	Study of Realistic Urban Boundary Layer Turbulence with High-Resolution Large-Eddy Simulation. Atmosphere, 2020, 11, 201.	1.0	32
76	Impact of Urban Vegetation on Outdoor Thermal Comfort: Comparison between a Mediterranean City (Lecce, Italy) and a Northern European City (Lahti, Finland). Forests, 2020, 11, 228.	0.9	50
77	Computational fluid dynamics simulation of tree effects on pedestrian wind comfort in an urban area. Sustainable Cities and Society, 2020, 56, 102086.	5.1	51
78	Impact of small-scale tree planting patterns on outdoor cooling and thermal comfort. Sustainable Cities and Society, 2020, 56, 102085.	5.1	62
79	CFD simulation of the drag effect of urban trees: Source term modification method revisited at the tree scale. Sustainable Cities and Society, 2020, 56, 102079.	5.1	23
80	Near real-time prediction of wind-induced tree damage at a city scale: Simulation framework and case study for Tsinghua University campus. International Journal of Disaster Risk Reduction, 2021, 53, 102003.	1.8	7
81	A rapid fine-scale approach to modelling urban bioclimatic conditions. Science of the Total Environment, 2021, 756, 143732.	3.9	22
82	Nature-Based-Solutions Applied to the Built Environment to Alleviate Climate Change: Benefits, Co-Benefits, and Trade-offs in a Geographical Multi-Scale Perspective., 2021,, 1-52.		0
83	Compensation Method for Shadow Effect of Mine Ultrasonic Anemometer. IEEE Access, 2021, 9, 118893-118906.	2.6	0
84	Greenery as a mitigation and adaptation strategy to urban heat. Nature Reviews Earth & Environment, 2021, 2, 166-181.	12.2	183
85	Urban Mitigation Potential of Quantum Dots and Transpiration Cooling: Transpiration Cooling to Mitigate Urban Overheating., 2021,, 1-27.		1
86	Global multi-model projections of local urban climates. Nature Climate Change, 2021, 11, 152-157.	8.1	149
87	Nature-Based Solutions Applied to the Built Environment to Alleviate Climate Change: Benefits, Co-benefits, and Trade-offs in a Geographical Multi-scale Perspective. , 2021, , 1-52.		0
88	A single-layer urban canopy model with transmissive radiation exchange between trees and street canyons. Building and Environment, 2021, 191, 107593.	3.0	50
89	Computational Simulation of Wind Microclimate in Complex Urban Models and Mitigation Using Trees. Buildings, 2021, 11, 112.	1.4	13
90	Tree model with drag, transpiration, shading and deposition: Identification of cooling regimes and large-eddy simulation. Agricultural and Forest Meteorology, 2021, 298-299, 108288.	1.9	9
91	Developing an adapted UTCI (Universal Thermal Climate Index) for the elderly population in China's severe cold climate region. Sustainable Cities and Society, 2021, 69, 102813.	5.1	12

#	Article	IF	CITATIONS
92	Detailed investigation of vegetation effects on microclimate by means of computational fluid dynamics (CFD) in a tropical urban environment. Urban Climate, 2021, 39, 100939.	2.4	12
93	Impact of morphological parameters on urban ventilation in compact cities: The case of the Tuscolano-Don Bosco district in Rome. Science of the Total Environment, 2022, 807, 150490.	3.9	48
94	3D Tree Reconstruction in Support of Urban Microclimate Simulation: A Comprehensive Literature Review. Buildings, 2021, 11, 417.	1.4	15
95	Greywater as a sustainable source for development of green roofs: Characteristics, treatment technologies, reuse, case studies and future developments. Journal of Environmental Management, 2021, 295, 112991.	3.8	16
96	Influences of street aspect ratios and realistic solar heating on convective heat transfer and ventilation in full-scale 2D street canyons. Building and Environment, 2021, 204, 108125.	3.0	18
97	Effects of Trees on Flow and Scalar Dispersion in an Urban Street Canyon. Atmosphere, 2015, 25, 685-692.	0.3	2
98	A Study on Estimation of Inflow Wind Speeds in a CFD Model Domain for an Urban Area. Atmosphere, 2017, 27, 67-77.	0.3	3
99	COMPUTATIONAL FLUID DYNAMICS APPLICATION FOR THE EVALUATION OF A COMMUNITY ATRIUM OPEN SPACE DESIGN INTEGRATED WITH MICROCLIMATE ENVIRONMENT. Applied Ecology and Environmental Research, 2017, 15, 1815-1831.	0.2	9
100	Simulation of the Urban Space Thermal Environment Based on Computational Fluid Dynamics: A Comprehensive Review. Sensors, 2021, 21, 6898.	2.1	14
101	Simulation and Validation of CFD turbulent airflow at pedestrian level using 3D ultrasonic anemometer in the controlled urban area "Sense-City― Journal of Wind Engineering and Industrial Aerodynamics, 2021, 219, 104801.	1.7	3
102	ENVI-MET MODEL AS A TOOL FOR MODERN URBAN METEOROLOGICAL STUDIES. Gìdrologìâ, Gìdrohìm Gìdroekologìâ, 2019, , 151-163.	Ã-âÃ-	0
103	A COMPARISON OF HEAT PERFORMANCE BETWEEN GREEN ROOFS ON CONCRETE AND GREEN ROOFS ON CORRUGATED ZINC. Dimensi: Journal of Architecture and Built Environment, 2020, 47, 55-64.	0.1	1
104	Fast fluid dynamics simulation of the airflow distributions in urban residential areas. Energy and Buildings, 2022, 255, 111635.	3.1	11
105	The effect of a living wall system designated for greywater treatment on the hygrothermal performance of the facade. Energy and Buildings, 2022, 255, 111711.	3.1	9
106	DeepUrbanDownscale: A physics informed deep learning framework for high-resolution urban surface temperature estimation via 3D point clouds. International Journal of Applied Earth Observation and Geoinformation, 2022, 106, 102650.	1.4	5
107	Urban buoyancy-driven air flow and modelling method: A critical review. Building and Environment, 2022, 210, 108708.	3.0	23
108	Penataan Lingkungan Kantor Desa Caturharjo Kecamatan Pandak Kabupaten Bantul., 2022, 2, 1-7.		1
109	Thermal performance prediction of street trees inside isolated open spaces – evaluations from real scale retrofitting project. Journal of Building Performance Simulation, 2023, 16, 381-397.	1.0	8

#	Article	IF	CITATIONS
110	Heat stress mitigation in urban streets having hot humid climatic conditions: Strategies and performance results from a real scale retrofitting project. Science and Technology for the Built Environment, 0, , 1-14.	0.8	2
111	An Evapotranspiration Evolution Model as a Function of Meteorological Variables: A CFD Model Approach. Sustainability, 2022, 14, 3800.	1.6	1
112	The Potential of Cool Materials Towards Improving Thermal Comfort Conditions Inside Real-urban Hot-humid Microclimate. Environment and Urbanization ASIA, 2022, 13, 56-72.	0.9	2
113	Estimating the cooling effect magnitude of urban vegetation in different climate zones using multi-source remote sensing. Urban Climate, 2022, 43, 101155.	2.4	18
114	The potential of facade greening in mitigating the effects of heatwaves in Central European cities. Building and Environment, 2022, 216, 109021.	3.0	20
115	Studying impact of infrastructure development on urban microclimate: Integrated multiparameter analysis using OpenFOAM. Energy Nexus, 2022, 6, 100060.	3.3	5
116	Parks Under Stress: Air Temperature Regulation of Urban Green Spaces Under Conditions of Drought and Summer Heat. Frontiers in Environmental Science, 2022, 10, .	1.5	16
117	Impacts of green walls on the characteristics of thermo-flow and photochemical reaction kinetics within street canyons. Urban Forestry and Urban Greening, 2022, 72, 127568.	2.3	3
118	Guru Ghasidas University Campus Greenery for off setting Carbon Dioxide and Improving Students' Academic Performance. Current World Environment Journal, 2022, 17, 213-225.	0.2	1
119	Nature-Based Solutions Applied to the Built Environment to Alleviate Climate Change: Benefits, Co-benefits, and Trade-offs in a Geographical Multi-scale Perspective. , 2022, , 2117-2167.		0
120	Urban Mitigation Potential of Quantum Dots and Transpiration Cooling: Transpiration Cooling to Mitigate Urban Overheating., 2022,, 3759-3785.		1
121	Modelling the cooling effectiveness of street trees with actual canopy drag and real transpiration rate under representative climatic conditions. Journal of Building Performance Simulation, 0, , 1-14.	1.0	5
122	Couple simulations with CFD and ladybug + honeybee tools for green façade optimizing the thermal comfort in a transitional space in hot-humid climate. Journal of Asian Architecture and Building Engineering, 2023, 22, 1317-1342.	1.2	5
123	Nature-based solution of greenery configuration design by comprehensive benefit evaluation of microclimate environment and carbon sequestration. Energy and Buildings, 2022, 270, 112264.	3.1	19
124	A Study of Simulation of the Urban Space 3D Temperature Field at a Community Scale Based on High-Resolution Remote Sensing and CFD. Remote Sensing, 2022, 14, 3174.	1.8	6
125	How trees affect urban air quality: It depends on the source. Atmospheric Environment, 2022, 290, 119275.	1.9	5
126	Intracity Temperature Estimation by Physics Informed Neural Network Using Modeled Forcing Meteorology and Multispectral Satellite Imagery. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60, 1-15.	2.7	3
127	Recent progress and challenges in microscale urban heat modeling and measurement for urban engineering applications. Journal of Thermal Science and Engineering Applications, 0, , 1-34.	0.8	1

#	Article	IF	CITATIONS
128	The Impact of Small-Scale Greening on the Local Microclimate—A Case Study at Two School Buildings in Vienna. Sustainability, 2022, 14, 13089.	1.6	3
129	Numerical evaluation of the use of vegetation as a shelterbelt for enhancing the wind and thermal comfort in peripheral and lateral-type skygardens in highrise buildings. Building Simulation, 2023, 16, 243-261.	3.0	6
130	Integrating CFD-GIS modelling to refine urban heat and thermal comfort assessment. Science of the Total Environment, 2023, 858, 159729.	3.9	8
131	Numerical Analysis of Heat and Mass Transfer in a Naturally Ventilated Greenhouse with Plants. Advances in Science, Technology and Innovation, 2022, , 265-268.	0.2	0
132	Effects of urban tree planting on thermal comfort and air quality in the street canyon in a subtropical climate. Sustainable Cities and Society, 2023, 91, 104334.	5.1	14
133	Evaporative Cooling Effect of Water-Sensitive Urban Design: Comparing a Living Wall with a Porous Concrete Pavement System. Water (Switzerland), 2022, 14, 3759.	1.2	2
134	A Parametric Study on the Effects of Green Roofs, Green Walls and Trees on Air Quality, Temperature and Velocity. Buildings, 2022, 12, 2159.	1.4	2
135	CFD simulations of the tree effect on the outdoor microclimate by coupling the canopy energy balance model. Building and Environment, 2023, 230, 109995.	3.0	10
136	Historical vegetation for microclimate amelioration: a case study for The Netherlands. Landscape Research, 2023, 48, 412-426.	0.7	0
137	Assessing financial subsidies for green roofs: A micro-scale analysis of Lisbon (Portugal). Cities, 2023, 137, 104295.	2.7	2
155	Computer-Aided Simulation on the Impact of the Combination of High-Rise Building Wall and Roof Green Coverage Ratio on Urban Microclimate. , 0, , .		0