Elie Bou-Zeid

List of Publications by Year
in descending order

138 papers	7,691 citations	50170 46 h-index	56606 83 g-index
152 all docs	152 docs citations	152 times ranked	5983 citing authors

#	Article	IF	Citations
1	Synergistic Interactions between Urban Heat Islands and Heat Waves: The Impact in Cities Is Larger than the Sum of Its Parts. Journal of Applied Meteorology and Climatology, 2013, 52, 2051-2064.	0.6	610
2	Magnitude of urban heat islands largely explained by climate and population. Nature, 2019, 573, 55-60.	13.7	546
3	A scale-dependent Lagrangian dynamic model for large eddy simulation of complex turbulent flows. Physics of Fluids, 2005, 17, 025105.	1.6	508
4	The effectiveness of cool and green roofs as urban heat island mitigation strategies. Environmental Research Letters, 2014, 9, 055002.	2.2	305
5	Interactions between urban heat islands and heat waves. Environmental Research Letters, 2018, 13, 034003.	2.2	246
6	Temporal variation of leachate quality from pre-sorted and baled municipal solid waste with high organic and moisture content. Waste Management, 2002, 22, 269-282.	3.7	215
7	Large-eddy simulation of neutral atmospheric boundary layer flow over heterogeneous surfaces: Blending height and effective surface roughness. Water Resources Research, 2004, 40, .	1.7	173
8	A coupled energy transport and hydrological model for urban canopies evaluated using a wireless sensor network. Quarterly Journal of the Royal Meteorological Society, 2013, 139, 1643-1657.	1.0	172
9	Coherent Structures and the Dissimilarity of Turbulent Transport of Momentum and Scalars in the Unstable Atmospheric Surface Layer. Boundary-Layer Meteorology, 2011, 140, 243-262.	1.2	152
10	Nested Mesoscale Large-Eddy Simulations with WRF: Performance in Real Test Cases. Journal of Hydrometeorology, 2012, 13, 1421-1441.	0.7	150
11	Global multi-model projections of local urban climates. Nature Climate Change, 2021, 11, 152-157.	8.1	149
12	Heatwaves and urban heat islands: A comparative analysis of multiple cities. Journal of Geophysical Research D: Atmospheres, 2017, 122, 168-178.	1.2	136
13	On the Nature of the Transition Between Roll and Cellular Organization in the Convective Boundary Layer. Boundary-Layer Meteorology, 2017, 163, 41-68.	1.2	131
14	Development and evaluation of a mosaic approach in the WRFâ€Noah framework. Journal of Geophysical Research D: Atmospheres, 2013, 118, 11,918.	1.2	106
15	Quality and sensitivity of high-resolution numerical simulation of urban heat islands. Environmental Research Letters, 2014, 9, 055001.	2.2	105
16	Hydrometeorological determinants of green roof performance via a vertically-resolved model for heat and water transport. Building and Environment, 2013, 60, 211-224.	3.0	91
17	Evaporation from three water bodies of different sizes and climates: Measurements and scaling analysis. Advances in Water Resources, 2008, 31, 160-172.	1.7	89
18	The influence of building geometry on street canyon air flow: Validation of large eddy simulations against wind tunnel experiments. Journal of Wind Engineering and Industrial Aerodynamics, 2017, 165, 115-130.	1.7	88

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19	Climate Change and Water Resources in Lebanon and the Middle East. Journal of Water Resources Planning and Management - ASCE, 2002, 128, 343-355.	1.3	86
20	Contribution of impervious surfaces to urban evaporation. Water Resources Research, 2014, 50, 2889-2902.	1.7	86
21	On the Parameterization of Surface Roughness at Regional Scales. Journals of the Atmospheric Sciences, 2007, 64, 216-227.	0.6	84
22	Analyzing the Sensitivity of WRFâ€™s Single-Layer Urban Canopy Model to Parameter Uncertainty Using Advanced Monte Carlo Simulation. Journal of Applied Meteorology and Climatology, 2011, 50, 1795-1814.	0.6	84
23	Albedo effect on radiative errors in air temperature measurements. Water Resources Research, 2009, 45, .	1.7	82
24	An urban ecohydrological model to quantify the effect of vegetation on urban climate and hydrology (UT&C v1.0). Geoscientific Model Development, 2020, 13, 335-362.	1.3	79
25	Realistic Representation of Trees in an Urban Canopy Model. Boundary-Layer Meteorology, 2016, 159, 193-220.	1.2	78
26	Moninâ€“Obukhov Similarity Functions for the Structure Parameters of Temperature and Humidity. Boundary-Layer Meteorology, 2012, 145, 45-67.	1.2	75
27	Impact of Urbanization on Heavy Convective Precipitation under Strong Large-Scale Forcing: A Case Study over the Milwaukeeâ€“Lake Michigan Region. Journal of Hydrometeorology, 2014, 15, 261-278.	0.7	74
28	The Effects of Building Representation and Clustering in Large-Eddy Simulations of Flows in Urban Canopies. Boundary-Layer Meteorology, 2009, 132, 415-436.	1.2	72
29	Turbulence and Vertical Fluxes in the Stable Atmospheric Boundary Layer. Part I: A Large-Eddy Simulation Study. Journals of the Atmospheric Sciences, 2013, 70, 1513-1527.	0.6	72
30	Implementation and Evaluation of Dynamic Subfilter-Scale Stress Models for Large-Eddy Simulation Using WRF*. Monthly Weather Review, 2012, 140, 266-284.	0.5	71
31	A Spatially-Analytical Scheme for Surface Temperatures and Conductive Heat Fluxes in Urban Canopy Models. Boundary-Layer Meteorology, 2011, 138, 171-193.	1.2	70
32	Modeling Land Surface Processes and Heavy Rainfall in Urban Environments: Sensitivity to Urban Surface Representations. Journal of Hydrometeorology, 2013, 14, 1098-1118.	0.7	66
33	Seasonal hysteresis of surface urban heat islands. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 7082-7089.	3.3	66
34	Adaptive measures for mitigating urban heat islands: The potential of thermochromic materials to control roofing energy balance. Applied Energy, 2019, 247, 155-170.	5.1	65
35	High-resolution simulation of heatwave events in New York City. Theoretical and Applied Climatology, 2017, 128, 89-102.	1.3	64
36	The Persistent Challenge of Surface Heterogeneity in Boundary-Layer Meteorology: A Review. Boundary-Layer Meteorology, 2020, 177, 227-245.	1.2	62

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37	Turbulent Transport of Momentum and Scalars Above an Urban Canopy. Boundary-Layer Meteorology, 2014, 150, 485-511.	1.2	60
38	To irrigate or not to irrigate: Analysis of green roof performance via a vertically-resolved hygrothermal model. Building and Environment, 2014, 73, 127-137.	3.0	59
39	Field study of the dynamics and modelling of subgrid-scale turbulence in a stable atmospheric surface layer over a glacier. Journal of Fluid Mechanics, 2010, 665, 480-515.	1.4	58
40	Direct numerical simulations of turbulent Ekman layers with increasing static stability: modifications to the bulk structure and second-order statistics. Journal of Fluid Mechanics, 2014, 760, 494-539.	1.4	58
41	Should Cities Embrace Their Heat Islands as Shields from Extreme Cold?. Journal of Applied Meteorology and Climatology, 2018, 57, 1309-1320.	0.6	57
42	Increasing the Power Production of Vertical-Axis Wind-Turbine Farms Using Synergistic Clustering. Boundary-Layer Meteorology, 2018, 169, 275-296.	1.2	55
43	A novel approach for the estimation of soil ground heat flux. Agricultural and Forest Meteorology, 2012, 154-155, 214-221.	1.9	54
44	Transition and Equilibration of Neutral Atmospheric Boundary Layer Flow in One-Way Nested Large-Eddy Simulations Using the Weather Research and Forecasting Model. Monthly Weather Review, 2013, 141, 918-940.	0.5	53
45	Scale dependence of the benefits and efficiency of green and cool roofs. Landscape and Urban Planning, 2019, 185, 127-140.	3.4	52
46	Two phenomenological constants explain similarity laws in stably stratified turbulence. Physical Review E, 2014, 89, 023007.	0.8	48
47	Climate, not conflict, explains extreme Middle East dust storm. Environmental Research Letters, 2016, 11, 114013.	2.2	48
48	Estimation of urban sensible heat flux using a dense wireless network of observations. Environmental Fluid Mechanics, 2009, 9, 635-653.	0.7	47
49	The impact and treatment of the Gibbs phenomenon in immersed boundary method simulations of momentum and scalar transport. Journal of Computational Physics, 2016, 310, 237-251.	1.9	47
50	Quantifying uncertainties from mobile-laboratory-derived emissions of well pads using inverse Gaussian methods. Atmospheric Chemistry and Physics, 2018, 18, 15145-15168.	1.9	47
51	Influence of Subfacet Heterogeneity and Material Properties on the Urban Surface Energy Budget. Journal of Applied Meteorology and Climatology, 2014, 53, 2114-2129.	0.6	45
52	Simulation and wake analysis of a single vertical axis wind turbine. Wind Energy, 2017, 20, 713-730.	1.9	45
53	Evolution of superficial lake water temperature profile under diurnal radiative forcing. Water Resources Research, 2011, 47, .	1.7	44
54	Quality and reliability of LES of convective scalar transfer at high Reynolds numbers. International Journal of Heat and Mass Transfer, 2016, 102, 959-970.	2.5	42

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55	Subgrid-Scale Dynamics of Water Vapour, Heat, and Momentum over a Lake. Boundary-Layer Meteorology, 2008, 128, 205-228.	1.2	40
56	Numerical simulation of flow over urban-like topographies and evaluation of turbulence temporal attributes. Journal of Turbulence, 2015, 16, 809-831.	0.5	40
57	The Influence of Land Surface Heterogeneities on Heavy Convective Rainfall in the Baltimoreâ€"Washington Metropolitan Area. Monthly Weather Review, 2016, 144, 553-573.	0.5	40
58	Scale dependence of subgrid-scale model coefficients: An a priori study. Physics of Fluids, 2008, 20, 115106.	1.6	38
59	Mean velocity and temperature profiles in a sheared diabatic turbulent boundary layer. Physics of Fluids, 2012, 24, .	1.6	38
60	Very-Large-Scale Motions in the Atmospheric Boundary Layer Educed by Snapshot Proper Orthogonal Decomposition. Boundary-Layer Meteorology, 2014, 153, 355-387.	1.2	37
61	On the variability of the Priestleyâ€Taylor coefficient over water bodies. Water Resources Research, 2016, 52, 150-163.	1.7	37
62	Shaping buildings to promote street ventilation: A large-eddy simulation study. Urban Climate, 2018, 26, 76-94.	2.4	37
63	Contrasts between momentum and scalar transport over very rough surfaces. Journal of Fluid Mechanics, 2019, 880, 32-58.	1.4	37
64	The joint influence of albedo and insulation on roof performance: An observational study. Energy and Buildings, 2015, 93, 249-258.	3.1	36
65	Transportation GHG emissions in developing countries.. Transportation Research, Part D: Transport and Environment, 1999, 4, 251-264.	3.2	33
66	Mean and turbulence dynamics in unsteady Ekman boundary layers. Journal of Fluid Mechanics, 2017, 816, 209-242.	1.4	32
67	Importance of Superemitter Natural Gas Well Pads in the Marcellus Shale. Environmental Science & Technology, 2019, 53, 4747-4754.	4.6	32
68	Turbulent Energy Spectra and Cospectra of Momentum and Heat Fluxes in the Stable Atmospheric Surface Layer. Boundary-Layer Meteorology, 2015, 157, 1-21.	1.2	31
69	Roof cooling by direct evaporation from a porous layer. Energy and Buildings, 2016, 127, 521-528.	3.1	31
70	On the role of return to isotropy in wall-bounded turbulent flows with buoyancy. Journal of Fluid Mechanics, 2018, 856, 61-78.	1.4	30
71	Estimation of wet surface evaporation from sensible heat flux measurements. Water Resources Research, 2009, 45, .	1.7	29
72	Urban climate and resiliency: A synthesis report of state of the art and future research directions. Urban Climate, 2021, 38, 100858.	2.4	29

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73	Scaling and Similarity of the Anisotropic Coherent Eddies in Near-Surface Atmospheric Turbulence. Journals of the Atmospheric Sciences, 2018, 75, 943-964.	0.6	28
74	Intercomparison of Large-Eddy Simulations of the Antarctic Boundary Layer for Very Stable Stratification. Boundary-Layer Meteorology, 2020, 176, 369-400.	1.2	28
75	Parametric sensitivity analysis of leachate transport simulations at landfills. Waste Management, 2004, 24, 681-689.	3.7	27
76	ChallengingÂtheÂlargeÂeddy simulationÂtechniqueÂwith advancedÂ<i>aÂposteriori</i>Âtests. Journal of Fluid Mechanics, 2015, 764, 1-4.	1.4	25
77	The effect of stable thermal stratification on turbulent boundary layer statistics. Journal of Fluid Mechanics, 2017, 812, 1039-1075.	1.4	25
78	Mean scalar concentration profile in a sheared and thermally stratified atmospheric surface layer. Physical Review E, 2013, 87, 023004.	0.8	24
79	Turbulence and Vertical Fluxes in the Stable Atmospheric Boundary Layer. Part II: A Novel Mixing-Length Model. Journals of the Atmospheric Sciences, 2013, 70, 1528-1542.	0.6	24
80	Large-Eddy Simulations and Damped-Oscillator Models of the Unsteady Ekman Boundary Layer*. Journals of the Atmospheric Sciences, 2016, 73, 25-40.	0.6	24
81	Comparing the effectiveness of weatherization treatments for low-income, American, urban housing stocks in different climates. Energy and Buildings, 2014, 69, 535-543.	3.1	22
82	Signatures of Airâ€“Wave Interactions Over a Large Lake. Boundary-Layer Meteorology, 2018, 167, 445-468.	1.2	21
83	Designing sensor networks to resolve spatio-temporal urban temperature variations: fixed, mobile or hybrid?. Environmental Research Letters, 2019, 14, 074022.	2.2	21
84	Critical flux Richardson number for Kolmogorov turbulence enabled by TKE transport. Quarterly Journal of the Royal Meteorological Society, 2019, 145, 1551-1558.	1.0	21
85	Plume or bubble? Mixed-convection flow regimes and city-scale circulations. Journal of Fluid Mechanics, 2020, 897, .	1.4	21
86	Modeling and sensitivity analysis of transport and deposition of radionuclides from the Fukushima Dai-ichi accident. Atmospheric Chemistry and Physics, 2014, 14, 11065-11092.	1.9	20
87	On the correlation of water vapor and CO₂: Application to flux partitioning of evapotranspiration. Water Resources Research, 2016, 52, 9452-9469.	1.7	20
88	Revisiting the relation between momentum and scalar roughness lengths of urban surfaces. Quarterly Journal of the Royal Meteorological Society, 2020, 146, 3144-3164.	1.0	20
89	The joint influence of albedo and insulation on roof performance: A modeling study. Energy and Buildings, 2015, 102, 317-327.	3.1	19
90	What Is the Use of Elephant Hair?. PLoS ONE, 2012, 7, e47018.	1.1	19

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91	What model resolution is required in climatological downscaling over complex terrain?. Atmospheric Research, 2018, 203, 68-82.	1.8	18
92	Non-stationary Boundary Layers. Boundary-Layer Meteorology, 2020, 177, 189-204.	1.2	18
93	Humans in the city: Representing outdoor thermal comfort in urban canopy models. Renewable and Sustainable Energy Reviews, 2020, 133, 110103.	8.2	18
94	Modulation of Mean Wind and Turbulence in the Atmospheric Boundary Layer by Baroclinicity. Journals of the Atmospheric Sciences, 2018, 75, 3797-3821.	0.6	17
95	Collocating offshore wind and wave generators to reduce power output variability: A Multi-site analysis. Renewable Energy, 2021, 163, 1548-1559.	4.3	17
96	Direct partitioning of eddy-covariance water and carbon dioxide fluxes into ground and plant components. Agricultural and Forest Meteorology, 2022, 315, 108790.	1.9	17
97	Future intensification of hydro-meteorological extremes: downscaling using the weather research and forecasting model. Climate Dynamics, 2017, 49, 3765-3785.	1.7	16
98	Analytical Reduced Models for the Non-stationary Diabatic Atmospheric Boundary Layer. Boundary-Layer Meteorology, 2017, 164, 383-399.	1.2	15
99	Landfill evolution and treatability assessment of highâ€strength leachate from msw with high organic and moisture content. International Journal of Environmental Studies, 2003, 60, 603-615.	0.7	14
100	Bottlenecks in turbulent kinetic energy spectra predicted from structure function inflections using the Von KÃ¡rmÃ¡n-Howarth equation. Physical Review E, 2015, 92, 033009.	0.8	14
101	Surface heat assessment for developed environments: Probabilistic urban temperature modeling. Computers, Environment and Urban Systems, 2017, 66, 53-64.	3.3	14
102	Inertial gravity currents produced by fluid drainage from an edge. Journal of Fluid Mechanics, 2017, 827, 640-663.	1.4	14
103	Rapid Modification of Urban Land Surface Temperature During Rainfall. Water Resources Research, 2018, 54, 4245-4264.	1.7	13
104	A kernel-modulated SIR model for Covid-19 contagious spread from county to continent. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	13
105	Baroclinicity and directional shear explain departures from the logarithmic wind profile. Quarterly Journal of the Royal Meteorological Society, 2021, 147, 443-464.	1.0	12
106	The environmental neighborhoods of cities and their spatial extent. Environmental Research Letters, 2020, 15, 074034.	2.2	12
107	Surface heat assessment for developed environments: Optimizing urban temperature monitoring. Building and Environment, 2018, 141, 143-154.	3.0	11
108	Population agglomeration is a harbinger of the spatial complexity of COVID-19. Chemical Engineering Journal, 2021, 420, 127702.	6.6	11

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109	Impact of advection on two-source energy balance (TSEB) canopy transpiration parameterization for vineyards in the California Central Valley. Irrigation Science, 2022, 40, 575-591.	1.3	11
110	Application of a remote-sensing three-source energy balance model to improve evapotranspiration partitioning in vineyards. Irrigation Science, 2022, 40, 593-608.	1.3	11
111	New York City Panel on Climate Change 2015 Report Chapter 6: Indicators and Monitoring. Annals of the New York Academy of Sciences, 2015, 1336, 89-106.	1.8	10
112	Greenhouse gas mitigation benefits and cost-effectiveness of weatherization treatments for low-income, American, urban housing stocks. Energy and Buildings, 2016, 128, 911-920.	3.1	10
113	Seasonal and Regional Patterns of Future Temperature Extremes: Highâ€Resolution Dynamic Downscaling Over a Complex Terrain. Journal of Geophysical Research D: Atmospheres, 2018, 123, 6669-6689.	1.2	10
114	On the Climatology of Precipitable Water and Water Vapor Flux in the Mid-Atlantic Region of the United States. Journal of Hydrometeorology, 2015, 16, 70-87.	0.7	9
115	The Detection, Genesis, and Modeling of Turbulence Intermittency in the Stable Atmospheric Surface Layer. Journals of the Atmospheric Sciences, 2022, 79, 1171-1190.	0.6	9
116	A novel approach for unraveling the energy balance of water surfaces with a single depth temperature measurement. Limnology and Oceanography, 2017, 62, 89-103.	1.6	8
117	The Hydrological Urban Heat Island: Determinants of Acute and Chronic Heat Stress in Urban Streams. Journal of the American Water Resources Association, 2021, 57, 941-955.	1.0	8
118	To what extent does high-resolution dynamical downscaling improve the representation of climatic extremes over an orographically complex terrain?. Theoretical and Applied Climatology, 2018, 134, 265-282.	1.3	7
119	A Novel Deep Learning Approach to the Statistical Downscaling of Temperatures for Monitoring Climate Change. , 2022, , .		7
120	The Regional Water Cycle and Heavy Spring Rainfall in Iowa: Observational and Modeling Analyses from the IFloodS Campaign. Journal of Hydrometeorology, 2016, 17, 2763-2784.	0.7	6
121	Short-term probabilistic forecasting of meso-scale near-surface urban temperature fields. Environmental Modelling and Software, 2021, 145, 105189.	1.9	6
122	Development and testing of a fully-coupled subsurface-land surface-atmosphere hydrometeorological model: High-resolution application in urban terrains. Urban Climate, 2021, 40, 100985.	2.4	6
123	Mean kinetic energy replenishment mechanisms in vertical-axis wind turbine farms. Physical Review Fluids, 2018, 3, .	1.0	6
124	Comment on â€œImpact of wave phase difference between soil surface heat flux and soil surface temperature on soil surface energy balance closureâ€•by Z. Gao, R. Horton, and H. P. Liu. Journal of Geophysical Research, 2011, 116, .	3.3	5
125	Evaluation of Turbulent Surface Flux Parameterizations over Tall Grass in a Beijing Suburb. Journal of Hydrometeorology, 2013, 14, 1620-1635.	0.7	5
126	Physical Determinants and Reduced Models of the Rapid Cooling of Urban Surfaces During Rainfall. Journal of Advances in Modeling Earth Systems, 2019, 11, 1364-1380.	1.3	4

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127	Evaluating different metrics from the thermal-based two-source energy balance model for monitoring grapevine water stress. Irrigation Science, 0, , .	1.3	4
128	ECCENTRIC Buildings: Evaporative Cooling in Constructed ENvelopes by Transmission and Retention Inside Casings of Buildings. Energy Procedia, 2015, 78, 1593-1598.	1.8	3
129	Inverse Cascade Evidenced by Information Entropy of Passive Scalars in Submerged Canopy Flows. Geophysical Research Letters, 2020, 47, e2020GL087486.	1.5	3
130	Rate of decay of turbulent kinetic energy in abruptly stabilized Ekman boundary layers. Physical Review Fluids, 2019, 4, .	1.0	3
131	Probability law of turbulent kinetic energy in the atmospheric surface layer. Physical Review Fluids, 2021, 6, .	1.0	2
132	Hacking a soil water content reflectometer to measure liquid level. Flow Measurement and Instrumentation, 2019, 65, 174-179.	1.0	1
133	SNOHATS: Stratified atmospheric turbulence over snow surfaces. , 2007, , 520-522.		1
134	Atmospheric surface layer turbulence over water surfaces and sub-grid scale physics. Springer Proceedings in Physics, 2007, , 517-519.	0.1	1
135	Publisher's Note: Mean scalar concentration profile in a sheared and thermally stratified atmospheric surface layer [Phys. Rev. E87, 023004 (2013)]. Physical Review E, 2013, 87, .	0.8	0
136	Publisher's Note: Two phenomenological constants explain similarity laws in stably stratified turbulence [Phys. Rev. E89, 023007 (2014)]. Physical Review E, 2014, 89, .	0.8	0
137	Data Availability Principles and Practice. Journals of the Atmospheric Sciences, 2020, 77, 3983-3984.	0.6	0
138	Developing Time-Variant Filter for Meso-Scale Surface Temperature Prediction. IABSE Symposium Report, 2020, , .	0.0	0