Julie K Lundquist

List of Publications by Year
in descending order

137 papers	7,084 citations	53751 45 h-index	66879 78 g-index
196 all docs	196 docs citations	196 times ranked	4227 citing authors

#	Article	IF	Citations
1	Meso- to microscale modeling of atmospheric stability effects on wind turbine wake behavior in complex terrain. Wind Energy Science, 2022, 7, 367-386.	1.2	8
2	Improved representation of horizontal variability and turbulence in mesoscale simulations of an extended cold-air pool event. Journal of Applied Meteorology and Climatology, 2022, , .	0.6	4
3	Can reanalysis products outperform mesoscale numerical weather prediction models in modeling the wind resource in simple terrain?. Wind Energy Science, 2022, 7, 487-504.	1.2	10
4	How generalizable is a machine-learning approach for modeling hub-height turbulence intensity?. Journal of Physics: Conference Series, 2022, 2265, 022028.	0.3	0
5	How does the rotational direction of an upwind turbine affect its downwind neighbour?. Journal of Physics: Conference Series, 2022, 2265, 022048.	0.3	0
6	Design of the American Wake Experiment (AWAKEN) field campaign. Journal of Physics: Conference Series, 2022, 2265, 022058.	0.3	1
7	Overcoming the disconnect between energy system and climate modeling. Joule, 2022, 6, 1405-1417.	11.7	31
8	Assimilation of a Coordinated Fleet of Uncrewed Aircraft System Observations in Complex Terrain: Observing System Experiments. Monthly Weather Review, 2022, 150, 2737-2763.	0.5	3
9	Validating simulated mountain wave impacts on hub-height wind speed using SoDAR observations. Renewable Energy, 2021, 163, 2220-2230.	4.3	9
10	The Importance of Weather and Climate to Energy Systems: A Workshop on Next Generation Challenges in Energyâ€“Climate Modeling. Bulletin of the American Meteorological Society, 2021, 102, E159-E167.	1.7	20
11	Remote-sensing and radiosonde datasets collected in the San Luis Valley during the LAPSE-RATE campaign. Earth System Science Data, 2021, 13, 1041-1051.	3.7	8
12	Assimilation of a Coordinated Fleet of Uncrewed Aircraft System Observations in Complex Terrain: EnKF System Design and Preliminary Assessment. Monthly Weather Review, 2021, 149, 1459-1480.	0.5	15
13	Turbulence dissipation rate estimated from lidar observations during the LAPSE-RATE field campaign. Earth System Science Data, 2021, 13, 3539-3549.	3.7	3
14	Mountain waves can impact wind power generation. Wind Energy Science, 2021, 6, 45-60.	1.2	14
15	Observations and simulations of a wind farm modifying a thunderstorm outflow boundary. Wind Energy Science, 2021, 6, 1-13.	1.2	4
16	Wind plants can impact long-term local atmospheric conditions. Scientific Reports, 2021, 11, 22939.	1.6	15
17	Upper Troposphere Smoke Injection From Large Areal Fires. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD034332.	1.2	5
18	Development of Community, Capabilities, and Understanding through Unmanned Aircraft-Based Atmospheric Research: The LAPSE-RATE Campaign. Bulletin of the American Meteorological Society, 2020, 101, E684-E699.	1.7	38

#	Article	IF	Citations
19	Offshore Wind Turbines Will Encounter Very Low Atmospheric Turbulence. Journal of Physics: Conference Series, 2020, 1452, 012023.	0.3	12
20	Evaluating the WFIP2 updates to the HRRR model using scanning Doppler lidar measurements in the complex terrain of the Columbia River Basin. Journal of Renewable and Sustainable Energy, 2020, 12, .	0.8	8
21	The Effects of Wind Veer During the Morning and Evening Transitions. Journal of Physics: Conference Series, 2020, 1452, 012075.	0.3	8
22	Long-range Doppler lidar measurements of wind turbine wakes and their interaction with turbulent atmospheric boundary-layer flow at Perdigao 2017. Journal of Physics: Conference Series, 2020, 1618, 032034.	0.3	3
23	Longitudinal coherence and short-term wind speed prediction based on a nacelle-mounted Doppler lidar. Journal of Physics: Conference Series, 2020, 1618, 032051.	0.3	3
24	Turbulent kinetic energy over large offshore wind farms observed and simulated by the mesoscale model WRF (3.8.1). Geoscientific Model Development, 2020, 13, 249-268.	1.3	42
25	How does inflow veer affect the veer of a wind-turbine wake?. Journal of Physics: Conference Series, 2020, 1452, 012068.	0.3	9
26	Characterizing Thunderstorm Gust Fronts near Complex Terrain. Monthly Weather Review, 2020, 148, 3267-3286.	0.5	11
27	Wind Ramp Events Validation in NWP Forecast Models during the Second Wind Forecast Improvement Project (WFIP2) Using the Ramp Tool and Metric (RT&M). Weather and Forecasting, 2020, 35, 2407-2421.	0.5	4
28	Data generated during the 2018 LAPSE-RATE campaign: an introduction and overview. Earth System Science Data, 2020, 12, 3357-3366.	3.7	18
29	Simulated wind farm wake sensitivity to configuration choices in the Weather Research and Forecasting model version 3.8.1. Geoscientific Model Development, 2020, 13, 2645-2662.	1.3	22
30	Can machine learning improve the model representation of turbulent kinetic energy dissipation rate in the boundary layer for complex terrain?. Geoscientific Model Development, 2020, 13, 4271-4285.	1.3	14
31	How wind speed shear and directional veer affect the power production of a megawatt-scale operational wind turbine. Wind Energy Science, 2020, 5, 1169-1190.	1.2	23
32	The effect of wind direction shear on turbine performance in a wind farm in central Iowa. Wind Energy Science, 2020, 5, 125-139.	1.2	31
33	Does the rotational direction of a wind turbine impact the wake in a stably stratified atmospheric boundary layer?. Wind Energy Science, 2020, 5, 1359-1374.	1.2	8
34	Changing the rotational direction of a wind turbine under veering inflow: a parameter study. Wind Energy Science, 2020, 5, 1623-1644.	1.2	9
35	Continued results from a field campaign of wake steering applied at a commercial wind farm â€“ Part 2. Wind Energy Science, 2020, 5, 945-958.	1.2	63
36	An LES-based airborne Doppler lidar simulator and its application to wind profiling in inhomogeneous flow conditions. Atmospheric Measurement Techniques, 2020, 13, 1609-1631.	1.2	12

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37	Hurricane eyewall winds and structural response of wind turbines. Wind Energy Science, 2020, 5, 89-104.	1.2	8
38	Unmanned Aircraft Get Together: The LAPSE-RATE Campaign. Bulletin of the American Meteorological Society, 2020, 101, 590-596.	1.7	0
39	How many offshore wind turbines does New England need?. Meteorological Applications, 2020, 27, e1969.	0.9	5
40	Improving Wind Energy Forecasting through Numerical Weather Prediction Model Development. Bulletin of the American Meteorological Society, 2019, 100, 2201-2220.	1.7	87
41	Grand challenges in the science of wind energy. Science, 2019, 366, .	6.0	482
42	Random Force Perturbations: A New Extension of the Cell Perturbation Method for Turbulence Generation in Multiscale Atmospheric Boundary Layer Simulations. Journal of Advances in Modeling Earth Systems, 2019, 11, 2311-2329.	1.3	7
43	Spatial and temporal variability of turbulence dissipation rate in complex terrain. Atmospheric Chemistry and Physics, 2019, 19, 4367-4382.	1.9	23
44	The Second Wind Forecast Improvement Project (WFIP2): Observational Field Campaign. Bulletin of the American Meteorological Society, 2019, 100, 1701-1723.	1.7	55
45	U.S. East Coast Lidar Measurements Show Offshore Wind Turbines Will Encounter Very Low Atmospheric Turbulence. Geophysical Research Letters, 2019, 46, 5582-5591.	1.5	41
46	The Second Wind Forecast Improvement Project (WFIP2): General Overview. Bulletin of the American Meteorological Society, 2019, 100, 1687-1699.	1.7	45
47	Incorporation of the Rotor-Equivalent Wind Speed into the Weather Research and Forecasting Modelâ€™s Wind Farm Parameterization. Monthly Weather Review, 2019, 147, 1029-1046.	0.5	26
48	Characterization of flow recirculation zones at the PerdigÃ£o site using multi-lidar measurements. Atmospheric Chemistry and Physics, 2019, 19, 2713-2723.	1.9	34
49	Estimation of turbulence dissipation rate from Doppler wind lidars and in situ instrumentation for the PerdigÃ£o 2017 campaign. Atmospheric Measurement Techniques, 2019, 12, 6401-6423.	1.2	17
50	Impact of model improvements on 80â€‰m wind speeds during the second Wind Forecast Improvement Project (WFIP2). Geoscientific Model Development, 2019, 12, 4803-4821.	1.3	18
51	Costs and consequences of wind turbine wake effects arising from uncoordinated wind energy development. Nature Energy, 2019, 4, 26-34.	19.8	147
52	The PerdigÃ£o: Peering into Microscale Details of Mountain Winds. Bulletin of the American Meteorological Society, 2019, 100, 799-819.	1.7	93
53	Initial results from a field campaign of wake steering applied at a commercial wind farm â€“ Part 1. Wind Energy Science, 2019, 4, 273-285.	1.2	136
54	Turbulence Dissipation Rate in the Atmospheric Boundary Layer: Observations and WRF Mesoscale Modeling during the XPIA Field Campaign. Monthly Weather Review, 2018, 146, 351-371.	0.5	43

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55	Southward shift of the global wind energy resource under high carbon dioxide emissions. Nature Geoscience, 2018, 11, 38-43.	5.4	149
56	Micrometeorological impacts of offshore wind farms as seen in observations and simulations. Environmental Research Letters, 2018, 13, 124012.	2.2	44
57	Estimation of turbulence dissipation rate and its variability from sonic anemometer and wind Doppler lidar during the XPIA field campaign. Atmospheric Measurement Techniques, 2018, 11, 4291-4308.	1.2	43
58	Evaluation of a Wind Farm Parametrization for Mesoscale Atmospheric Flow Models with Aircraft Measurements. Meteorologische Zeitschrift, 2018, 27, 401-415.	0.5	36
59	Determining variabilities of non-Gaussian wind-speed distributions using different metrics and timescales. Journal of Physics: Conference Series, 2018, 1037, 072038.	0.3	3
60	Generating wind power scenarios for probabilistic ramp event prediction using multivariate statistical post-processing. Wind Energy Science, 2018, 3, 371-393.	1.2	18
61	Do wind turbines pose roll hazards to light aircraft?. Wind Energy Science, 2018, 3, 833-843.	1.2	7
62	Assessing variability of wind speed: comparison and validation of 27 methodologies. Wind Energy Science, 2018, 3, 845-868.	1.2	20
63	Gusts and shear within hurricane eyewalls can exceed offshore wind turbine design standards. Geophysical Research Letters, 2017, 44, 6413-6420.	1.5	30
64	A Census of Atmospheric Variability From Seconds to Decades. Geophysical Research Letters, 2017, 44, 11,201.	1.5	28
65	Observing and Simulating Wind-Turbine Wakes During the Evening Transition. Boundary-Layer Meteorology, 2017, 164, 449-474.	1.2	33
66	A wind turbine wake in changing atmospheric conditions: LES and lidar measurements. Journal of Physics: Conference Series, 2017, 854, 012050.	0.3	6
67	Using Large-Eddy Simulations to Define Spectral and Coherence Characteristics of the Hurricane Boundary Layer for Wind-Energy Applications. Boundary-Layer Meteorology, 2017, 165, 55-86.	1.2	24
68	Assessing State-of-the-Art Capabilities for Probing the Atmospheric Boundary Layer: The XPIA Field Campaign. Bulletin of the American Meteorological Society, 2017, 98, 289-314.	1.7	59
69	A Simple Method for Simulating Wind Profiles in the Boundary Layer of Tropical Cyclones. Boundary-Layer Meteorology, 2017, 162, 475-502.	1.2	38
70	Implementation of a generalized actuator line model for wind turbine parameterization in the Weather Research and Forecasting model. Journal of Renewable and Sustainable Energy, 2017, 9, .	0.8	18
71	Nested mesoscaleâ€toâ€LES modeling of the atmospheric boundary layer in the presence of underâ€resolved convective structures. Journal of Advances in Modeling Earth Systems, 2017, 9, 1795-1810.	1.3	39
72	Assessing the accuracy of microwave radiometers and radio acoustic sounding systems for wind energy applications. Atmospheric Measurement Techniques, 2017, 10, 1707-1721.	1.2	22

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73	Coupled mesoscaleâ€<scp>LES</scp> modeling of a diurnal cycle during the <scp>CWEX</scp>â€13 field campaign: From weather to boundaryâ€layer eddies. Journal of Advances in Modeling Earth Systems, 2017, 9, 1572-1594.	1.3	82
74	Identification of tower-wake distortions using sonic anemometer and lidar measurements. Atmospheric Measurement Techniques, 2017, 10, 393-407.	1.2	20
75	Evaluation of single and multiple Doppler lidar techniques to measure complex flow during the XPIA field campaign. Atmospheric Measurement Techniques, 2017, 10, 247-264.	1.2	26
76	Evaluation of the wind farm parameterization in the Weather Research and Forecasting model (version 3.8.1) with meteorologicalÂand turbine power data. Geoscientific Model Development, 2017, 10, 4229-4244.	1.3	45
77	Vertical profiles of the 3-D wind velocity retrieved from multiple wind lidars performing triple range-height-indicator scans. Atmospheric Measurement Techniques, 2017, 10, 431-444.	1.2	16
78	Three-dimensional structure of wind turbine wakes as measured by scanning lidar. Atmospheric Measurement Techniques, 2017, 10, 2881-2896.	1.2	58
79	Validating precision estimates in horizontal wind measurements from a Doppler lidar. Atmospheric Measurement Techniques, 2017, 10, 1229-1240.	1.2	38
80	Assessment of virtual towers performed with scanning wind lidars and Ka-band radars during the XPIA experiment. Atmospheric Measurement Techniques, 2017, 10, 1215-1227.	1.2	17
81	Atmospheric turbulence affects wind turbine nacelle transfer functions. Wind Energy Science, 2017, 2, 295-306.	1.2	21
82	Workshop on Climate Effects of Wind Turbines. Bulletin of the American Meteorological Society, 2016, 97, ES57-ES58.	1.7	0
83	Simulating effects of a windâ€turbine array using LES and RANS. Journal of Advances in Modeling Earth Systems, 2016, 8, 1376-1390.	1.3	45
84	Could Crop Height Affect the Wind Resource at Agriculturally Productive Wind Farm Sites?. Boundary-Layer Meteorology, 2016, 158, 409-428.	1.2	21
85	Year-to-year correlation, record length, and overconfidence in wind resource assessment. Wind Energy Science, 2016, 1, 115-128.	1.2	5
86	Wind turbine power production and annual energy production depend on atmospheric stability and turbulence. Wind Energy Science, 2016, 1, 221-236.	1.2	65
87	Investigating wind turbine impacts on near-wake flow using profiling lidar data and large-eddy simulations with an actuator disk model. Journal of Renewable and Sustainable Energy, 2015, 7, .	0.8	48
88	The role of atmospheric stability/turbulence on wakes at the Egmond aan Zee offshore wind farm. Journal of Physics: Conference Series, 2015, 625, 012002.	0.3	12
89	Variability of interconnected wind plants: correlation length and its dependence on variability time scale. Environmental Research Letters, 2015, 10, 044004.	2.2	50
90	Dissipation of Turbulence in the Wake of a Wind Turbine. Boundary-Layer Meteorology, 2015, 154, 229-241.	1.2	37

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91	Quantifying error of lidar and sodar Doppler beam swinging measurements of wind turbine wakes using computational fluid dynamics. Atmospheric Measurement Techniques, 2015, 8, 907-920.	1.2	86
92	3D Volumetric Analysis of Wind Turbine Wake Properties in the Atmosphere Using High-Resolution Doppler Lidar. Journal of Atmospheric and Oceanic Technology, 2015, 32, 904-914.	0.5	45
93	Observing and Simulating the Summertime Low-Level Jet in Central Iowa. Monthly Weather Review, 2015, 143, 2319-2336.	0.5	52
94	Quantifying Wind Turbine Wake Characteristics from Scanning Remote Sensor Data. Journal of Atmospheric and Oceanic Technology, 2014, 31, 765-787.	0.5	120
95	Utility-Scale Wind Turbine Wake Characterization Using Nacelle-Based Long-Range Scanning Lidar. Journal of Atmospheric and Oceanic Technology, 2014, 31, 1529-1539.	0.5	43
96	Large eddy simulation of wind turbine wake dynamics in the stable boundary layer using the Weather Research and Forecasting Model. Journal of Renewable and Sustainable Energy, 2014, 6, .	0.8	69
97	Implementation of a generalized actuator disk wind turbine model into the weather research and forecasting model for large-eddy simulation applications. Journal of Renewable and Sustainable Energy, 2014, 6, 013104.	0.8	69
98	Meteorology for Coastal/Offshore Wind Energy in the United States: Recommendations and Research Needs for the Next 10 Years. Bulletin of the American Meteorological Society, 2014, 95, 515-519.	1.7	46
99	Changes in fluxes of heat, H2O, and CO2 caused by a large wind farm. Agricultural and Forest Meteorology, 2014, 194, 175-187.	1.9	54
100	Measurements in support of wind farm simulations and power forecasts: The Crop/Wind-energy Experiments (CWEX). Journal of Physics: Conference Series, 2014, 524, 012174.	0.3	8
101	Parameterization of Wind Farms in Climate Models. Journal of Climate, 2013, 26, 6439-6458.	1.2	77
102	Lidar Investigation of Atmosphere Effect on a Wind Turbine Wake. Journal of Atmospheric and Oceanic Technology, 2013, 30, 2554-2570.	0.5	71
103	Mesoscale Influences of Wind Farms throughout a Diurnal Cycle. Monthly Weather Review, 2013, 141, 2173-2198.	0.5	109
104	The Effect of Wind-Turbine Wakes on Summertime US Midwest Atmospheric Wind Profiles as Observed with Ground-Based Doppler Lidar. Boundary-Layer Meteorology, 2013, 149, 85-103.	1.2	76
105	Impact of Low-Level Jets on the Nocturnal Urban Heat Island Intensity in Oklahoma City. Journal of Applied Meteorology and Climatology, 2013, 52, 1779-1802.	0.6	68
106	Turbine Inflow Characterization at the National Wind Technology Center. Journal of Solar Energy Engineering, Transactions of the ASME, 2013, 135, .	1.1	34
107	Using machine learning to predict wind turbine power output. Environmental Research Letters, 2013, 8, 024009.	2.2	89
108	Crop Wind Energy Experiment (CWEX): Observations of Surface-Layer, Boundary Layer, and Mesoscale Interactions with a Wind Farm. Bulletin of the American Meteorological Society, 2013, 94, 655-672.	1.7	119

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109	Data Clustering Reveals Climate Impacts on Local Wind Phenomena. Journal of Applied Meteorology and Climatology, 2012, 51, 1547-1557.	0.6	38
110	The modification of wind turbine performance by statistically distinct atmospheric regimes. Environmental Research Letters, 2012, 7, 034035.	2.2	64
111	Atmospheric stability affects wind turbine power collection. Environmental Research Letters, 2012, 7, 014005.	2.2	161
112	Performance of a Wind-Profiling Lidar in the Region of Wind Turbine Rotor Disks. Journal of Atmospheric and Oceanic Technology, 2012, 29, 347-355.	0.5	72
113	An Immersed Boundary Method Enabling Large-Eddy Simulations of Flow over Complex Terrain in the WRF Model. Monthly Weather Review, 2012, 140, 3936-3955.	0.5	95
114	Stability and turbulence in the atmospheric boundary layer: A comparison of remote sensing and tower observations. Geophysical Research Letters, 2012, 39, .	1.5	46
115	Local and Mesoscale Impacts of Wind Farms as Parameterized in a Mesoscale NWP Model. Monthly Weather Review, 2012, 140, 3017-3038.	0.5	236
116	Assessing atmospheric stability and its impacts on rotorâ€disk wind characteristics at an onshore windâ€‰farm. Wind Energy, 2012, 15, 525-546.	1.9	117
117	Turbine Inflow Characterization at the National Wind Technology Center. , 2012, , .		0
118	Development of a Coupled Groundwaterâ€"Atmosphere Model. Monthly Weather Review, 2011, 139, 96-116.	0.5	126
119	Enhancing energy production by wind farms. SPIE Newsroom, 2011, , .	0.1	1
120	Implementation of a Nonlinear Subfilter Turbulence Stress Model for Large-Eddy Simulation in the Advanced Research WRF Model. Monthly Weather Review, 2010, 138, 4212-4228.	0.5	125
121	An Immersed Boundary Method for the Weather Research and Forecasting Model. Monthly Weather Review, 2010, 138, 796-817.	0.5	90
122	Importance of Using Observations of Mixing Depths in order to Avoid Large Prediction Errors by a Transport and Dispersion Model. Journal of Atmospheric and Oceanic Technology, 2009, 26, 22-32.	0.5	20
123	Research Needs For Wind Resource Characterization. Bulletin of the American Meteorological Society, 2009, 90, 535-538.	1.7	25
124	Bayesian Inference and Markov Chain Monte Carlo Sampling to Reconstruct a Contaminant Source on a Continental Scale. Journal of Applied Meteorology and Climatology, 2008, 47, 2600-2613.	0.6	83
125	Interaction of Nocturnal Low-Level Jets with Urban Geometries as Seen in Joint Urban 2003 Data. Journal of Applied Meteorology and Climatology, 2008, 47, 44-58.	0.6	34
126	Parameterization of the Atmospheric Boundary Layer: A View from Just Above the Inversion. Bulletin of the American Meteorological Society, 2008, 89, 453-458.	1.7	70

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127	Consequences of Urban Stability Conditions for Computational Fluid Dynamics Simulations of Urban Dispersion. Journal of Applied Meteorology and Climatology, 2007, 46, 1080-1097.	0.6	24
128	A study of the variation of urban mixed layer heights. Atmospheric Environment, 2007, 41, 6923-6930.	1.9	13
129	Sequential Monte-Carlo Framework for Dynamic Data-Driven Event Reconstruction for Atmospheric Release. , 2006, , .		2
130	An Intercomparison of Large-Eddy Simulations of the Stable Boundary Layer. Boundary-Layer Meteorology, 2006, 118, 247-272.	1.2	417
131	Surface Layer Turbulence Measurements during a Frontal Passage. Journals of the Atmospheric Sciences, 2004, 61, 1768-1780.	0.6	52
132	Intermittent and Elliptical Inertial Oscillations in the Atmospheric Boundary Layer. Journals of the Atmospheric Sciences, 2003, 60, 2661-2673.	0.6	59
133	CASES-99: A Comprehensive Investigation of the Stable Nocturnal Boundary Layer. Bulletin of the American Meteorological Society, 2002, 83, 555-581.	1.7	418
134	Nocturnal Low-Level Jet Characteristics Over Kansas During Cases-99. Boundary-Layer Meteorology, 2002, 105, 221-252.	1.2	302
135	Spin-up and spin-down in rotating fluid exhibiting inertial oscillations and frontogenesis. Dynamics of Atmospheres and Oceans, 2001, 33, 219-237.	0.7	4
136	Landâ€“Atmosphere Interaction Research, Early Results, and Opportunities in the Walnut River Watershed in Southeast Kansas: CASES and ABLE. Bulletin of the American Meteorological Society, 2000, 81, 757-779.	1.7	94
137	CWEX: Crop/Wind-energy EXperiment: Observations of surface-layer, boundary-layer and mesoscale interactions with a wind farm. Bulletin of the American Meteorological Society, 0, , 130109100058001.	1.7	0