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	Grand challenges in the science of wind energy. Science, 2019, 366, .	6.0	482
2	CASES-99: A Comprehensive Investigation of the Stable Nocturnal Boundary Layer. Bulletin of the American Meteorological Society, 2002, 83, 555-581.	1.7	418
3	An Intercomparison of Large-Eddy Simulations of the Stable Boundary Layer. Boundary-Layer Meteorology, 2006, 118, 247-272.	1.2	417
4	Nocturnal Low-Level Jet Characteristics Over Kansas During Cases-99. Boundary-Layer Meteorology, 2002, 105, 221-252.	1.2	302
5	Local and Mesoscale Impacts of Wind Farms as Parameterized in a Mesoscale NWP Model. Monthly Weather Review, 2012, 140, 3017-3038.	0.5	236
6	Atmospheric stability affects wind turbine power collection. Environmental Research Letters, 2012, 7, 014005.	2.2	161
7	Southward shift of the global wind energy resource under high carbon dioxide emissions. Nature Geoscience, 2018, 11, 38-43.	5.4	149
8	Costs and consequences of wind turbine wake effects arising from uncoordinated wind energy development. Nature Energy, 2019, 4, 26-34.	19.8	147
9	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
10	Development of a Coupled Groundwaterâ€“Atmosphere Model. Monthly Weather Review, 2011, 139, 96-116.	0.5	126
11	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
12	Quantifying Wind Turbine Wake Characteristics from Scanning Remote Sensor Data. Journal of Atmospheric and Oceanic Technology, 2014, 31, 765-787.	0.5	120
13	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
14	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
15	Mesoscale Influences of Wind Farms throughout a Diurnal Cycle. Monthly Weather Review, 2013, 141, 2173-2198.	0.5	109
16	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
17	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
18	The PerdigÃ£o: Peering into Microscale Details of Mountain Winds. Bulletin of the American Meteorological Society, 2019, 100, 799-819.	1.7	93

#	Article	IF	Citations
19	An Immersed Boundary Method for the Weather Research and Forecasting Model. Monthly Weather Review, 2010, 138, 796-817.	0.5	90
20	Using machine learning to predict wind turbine power output. Environmental Research Letters, 2013, 8, 024009.	2.2	89
21	Improving Wind Energy Forecasting through Numerical Weather Prediction Model Development. Bulletin of the American Meteorological Society, 2019, 100, 2201-2220.	1.7	87
22	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
23	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
24	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
25	Parameterization of Wind Farms in Climate Models. Journal of Climate, 2013, 26, 6439-6458.	1.2	77
26	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
27	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
28	Lidar Investigation of Atmosphere Effect on a Wind Turbine Wake. Journal of Atmospheric and Oceanic Technology, 2013, 30, 2554-2570.	0.5	71
29	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
30	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
31	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
32	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
33	Wind turbine power production and annual energy production depend on atmospheric stability and turbulence. Wind Energy Science, 2016, 1, 221-236.	1.2	65
34	The modification of wind turbine performance by statistically distinct atmospheric regimes. Environmental Research Letters, 2012, 7, 034035.	2.2	64
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	Intermittent and Elliptical Inertial Oscillations in the Atmospheric Boundary Layer. Journals of the Atmospheric Sciences, 2003, 60, 2661-2673.	0.6	59

#	Article	IF	Citations
37	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
38	Three-dimensional structure of wind turbine wakes as measured by scanning lidar. Atmospheric Measurement Techniques, 2017, 10, 2881-2896.	1.2	58
39	The Second Wind Forecast Improvement Project (WFIP2): Observational Field Campaign. Bulletin of the American Meteorological Society, 2019, 100, 1701-1723.	1.7	55
40	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
41	Surface Layer Turbulence Measurements during a Frontal Passage. Journals of the Atmospheric Sciences, 2004, 61, 1768-1780.	0.6	52
42	Observing and Simulating the Summertime Low-Level Jet in Central Iowa. Monthly Weather Review, 2015, 143, 2319-2336.	0.5	52
43	Variability of interconnected wind plants: correlation length and its dependence on variability time scale. Environmental Research Letters, 2015, 10, 044004.	2.2	50
44	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
45	Stability and turbulence in the atmospheric boundary layer: A comparison of remote sensing and tower observations. Geophysical Research Letters, 2012, 39, .	1.5	46
46	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
47	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
48	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
49	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
50	The Second Wind Forecast Improvement Project (WFIP2): General Overview. Bulletin of the American Meteorological Society, 2019, 100, 1687-1699.	1.7	45
51	Micrometeorological impacts of offshore wind farms as seen in observations and simulations. Environmental Research Letters, 2018, 13, 124012.	2.2	44
52	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
53	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
54	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

#	Article	IF	Citations
55	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
56	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
57	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
58	Data Clustering Reveals Climate Impacts on Local Wind Phenomena. Journal of Applied Meteorology and Climatology, 2012, 51, 1547-1557.	0.6	38
59	A Simple Method for Simulating Wind Profiles in the Boundary Layer of Tropical Cyclones. Boundary-Layer Meteorology, 2017, 162, 475-502.	1.2	38
60	Validating precision estimates in horizontal wind measurements from a Doppler lidar. Atmospheric Measurement Techniques, 2017, 10, 1229-1240.	1.2	38
61	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
62	Dissipation of Turbulence in the Wake of a Wind Turbine. Boundary-Layer Meteorology, 2015, 154, 229-241.	1.2	37
63	Evaluation of a Wind Farm Parametrization for Mesoscale Atmospheric Flow Models with Aircraft Measurements. Meteorologische Zeitschrift, 2018, 27, 401-415.	0.5	36
64	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
65	Turbine Inflow Characterization at the National Wind Technology Center. Journal of Solar Energy Engineering, Transactions of the ASME, 2013, 135, .	1.1	34
66	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
67	Observing and Simulating Wind-Turbine Wakes During the Evening Transition. Boundary-Layer Meteorology, 2017, 164, 449-474.	1.2	33
68	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
69	Overcoming the disconnect between energy system and climate modeling. Joule, 2022, 6, 1405-1417.	11.7	31
70	Gusts and shear within hurricane eyewalls can exceed offshore wind turbine design standards. Geophysical Research Letters, 2017, 44, 6413-6420.	1.5	30
71	A Census of Atmospheric Variability From Seconds to Decades. Geophysical Research Letters, 2017, 44, 11,201.	1.5	28
72	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

#	Article	IF	Citations
73	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
74	Research Needs For Wind Resource Characterization. Bulletin of the American Meteorological Society, 2009, 90, 535-538.	1.7	25
75	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
76	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
77	Spatial and temporal variability of turbulence dissipation rate in complex terrain. Atmospheric Chemistry and Physics, 2019, 19, 4367-4382.	1.9	23
78	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
79	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
80	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
81	Could Crop Height Affect the Wind Resource at Agriculturally Productive Wind Farm Sites?. Boundary-Layer Meteorology, 2016, 158, 409-428.	1.2	21
82	Atmospheric turbulence affects wind turbine nacelle transfer functions. Wind Energy Science, 2017, 2, 295-306.	1.2	21
83	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
84	Identification of tower-wake distortions using sonic anemometer and lidar measurements. Atmospheric Measurement Techniques, 2017, 10, 393-407.	1.2	20
85	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
86	Assessing variability of wind speed: comparison and validation of 27 methodologies. Wind Energy Science, 2018, 3, 845-868.	1.2	20
87	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
88	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
89	Data generated during the 2018 LAPSE-RATE campaign: an introduction and overview. Earth System Science Data, 2020, 12, 3357-3366.	3.7	18
90	Generating wind power scenarios for probabilistic ramp event prediction using multivariate statistical post-processing. Wind Energy Science, 2018, 3, 371-393.	1.2	18

#	Article	IF	Citations
91	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
92	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
93	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
94	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
95	Wind plants can impact long-term local atmospheric conditions. Scientific Reports, 2021, 11, 22939.	1.6	15
96	Mountain waves can impact wind power generation. Wind Energy Science, 2021, 6, 45-60.	1.2	14
97	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
98	A study of the variation of urban mixed layer heights. Atmospheric Environment, 2007, 41, 6923-6930.	1.9	13
99	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
100	Offshore Wind Turbines Will Encounter Very Low Atmospheric Turbulence. Journal of Physics: Conference Series, 2020, 1452, 012023.	0.3	12
101	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
102	Characterizing Thunderstorm Gust Fronts near Complex Terrain. Monthly Weather Review, 2020, 148, 3267-3286.	0.5	11
103	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
104	Validating simulated mountain wave impacts on hub-height wind speed using SoDAR observations. Renewable Energy, 2021, 163, 2220-2230.	4.3	9
105	How does inflow veer affect the veer of a wind-turbine wake?. Journal of Physics: Conference Series, 2020, 1452, 012068.	0.3	9
106	Changing the rotational direction of a wind turbine under veering inflow: a parameter study. Wind Energy Science, 2020, 5, 1623-1644.	1.2	9
107	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
108	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

#	Article	IF	Citations
109	The Effects of Wind Veer During the Morning and Evening Transitions. Journal of Physics: Conference Series, 2020, 1452, 012075.	0.3	8
110	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
111	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
112	Hurricane eyewall winds and structural response of wind turbines. Wind Energy Science, 2020, 5, 89-104.	1.2	8
113	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
114	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
115	Do wind turbines pose roll hazards to light aircraft?. Wind Energy Science, 2018, 3, 833-843.	1.2	7
116	A wind turbine wake in changing atmospheric conditions: LES and lidar measurements. Journal of Physics: Conference Series, 2017, 854, 012050.	0.3	6
117	Year-to-year correlation, record length, and overconfidence in wind resource assessment. Wind Energy Science, 2016, 1, 115-128.	1.2	5
118	How many offshore wind turbines does New England need?. Meteorological Applications, 2020, 27, e1969.	0.9	5
119	Upper Troposphere Smoke Injection From Large Areal Fires. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD034332.	1.2	5
120	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
121	Observations and simulations of a wind farm modifying a thunderstorm outflow boundary. Wind Energy Science, 2021, 6, 1-13.	1.2	4
122	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
123	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
124	Determining variabilities of non-Gaussian wind-speed distributions using different metrics and timescales. Journal of Physics: Conference Series, 2018, 1037, 072038.	0.3	3
125	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
126	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

#	Article	IF	Citations
127	Turbulence dissipation rate estimated from lidar observations during the LAPSE-RATE field campaign. Earth System Science Data, 2021, 13, 3539-3549.	3.7	3
128	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
129	Sequential Monte-Carlo Framework for Dynamic Data-Driven Event Reconstruction for Atmospheric Release. , 2006, , .		2
130	Enhancing energy production by wind farms. SPIE Newsroom, 2011, , .	0.1	1
131	Design of the American Wake Experiment (AWAKEN) field campaign. Journal of Physics: Conference Series, 2022, 2265, 022058.	0.3	1
132	Workshop on Climate Effects of Wind Turbines. Bulletin of the American Meteorological Society, 2016, 97, ES57-ES58.	1.7	0
133	Turbine Inflow Characterization at the National Wind Technology Center. , 2012, , .		0
134	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
135	Unmanned Aircraft Get Together: The LAPSE-RATE Campaign. Bulletin of the American Meteorological Society, 2020, 101, 590-596.	1.7	0
136	How generalizable is a machine-learning approach for modeling hub-height turbulence intensity?. Journal of Physics: Conference Series, 2022, 2265, 022028.	0.3	0
137	How does the rotational direction of an upwind turbine affect its downwind neighbour?. Journal of Physics: Conference Series, 2022, 2265, 022048.	0.3	0