Fernando PortÃ©-Agel

List of Publications by Year
in descending order

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130	9,954	30070	36028
papers	citations	54	97
		h-index	g-index

130	130	130	3548
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	A new analytical model for wind-turbine wakes. Renewable Energy, 2014, 70, 116-123.	8.9	618
2	A scale-dependent dynamic model for large-eddy simulation: application to a neutral atmospheric boundary layer. Journal of Fluid Mechanics, 2000, 415, 261-284.	3.4	473
3	Wind-Turbine and Wind-Farm Flows: A Review. Boundary-Layer Meteorology, 2020, 174, 1-59.	2.3	458
4	Large-Eddy Simulation of Wind-Turbine Wakes: Evaluation of Turbine Parametrisations. Boundary-Layer Meteorology, 2011, 138, 345-366.	2.3	448
5	A Wind-Tunnel Investigation of Wind-Turbine Wakes: Boundary-Layer Turbulence Effects. Boundary-Layer Meteorology, 2009, 132, 129-149.	2.3	393
6	Large-eddy simulation of atmospheric boundary layer flow through wind turbines and wind farms. Journal of Wind Engineering and Industrial Aerodynamics, 2011, 99, 154-168.	3.9	389
7	Experimental and theoretical study of windÂturbine wakes in yawed conditions. Journal of Fluid Mechanics, 2016, 806, 506-541.	3.4	385
8	Influence of atmospheric stability on wind-turbine wakes: A large-eddy simulation study. Physics of Fluids, 2015, 27, .	4.0	268
9	Atmospheric Turbulence Effects on Wind-Turbine Wakes: An LES Study. Energies, 2012, 5, 5340-5362.	3.1	248
10	Large-eddy simulation of a very large wind farm in a stable atmospheric boundary layer. Physics of Fluids, 2011, 23, .	4.0	241
11	A Numerical Study of the Effects of Wind Direction on Turbine Wakes and Power Losses in a Large Wind Farm. Energies, 2013, 6, 5297-5313.	3.1	227
12	Effects of Thermal Stability and Incoming Boundary-Layer Flow Characteristics on Wind-Turbine Wakes: A Wind-Tunnel Study. Boundary-Layer Meteorology, 2010, 136, 515-533.	2.3	223
13	Modeling turbine wakes and power losses within a wind farm using LES: An application to the Horns Rev offshore wind farm. Renewable Energy, 2015, 75, 945-955.	8.9	212
14	On Moninâ€“Obukhov Similarity In The Stable Atmospheric Boundary Layer. Boundary-Layer Meteorology, 2001, 99, 225-248.	2.3	197
15	Analytical Modeling of Wind Farms: A New Approach for Power Prediction. Energies, 2016, 9, 741.	3.1	178
16	Simulation of Turbulent Flow Inside and Above Wind Farms: Model Validation and Layout Effects. Boundary-Layer Meteorology, 2013, 146, 181-205.	2.3	168
17	Near-wake flow structure downwind of a wind turbine in a turbulent boundary layer. Experiments in Fluids, 2012, 52, 1219-1235.	2.4	165
18	Large-Eddy Simulation of Stably Stratified Atmospheric Boundary Layer Turbulence: A Scale-Dependent Dynamic Modeling Approach. Journals of the Atmospheric Sciences, 2006, 63, 2074-2091.	1.7	144

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19	Turbulent Flow Inside and Above a Wind Farm: A Wind-Tunnel Study. Energies, 2011, 4, 1916-1936.	3.1	142
20	Dynamic subgrid-scale models for momentum and scalar fluxes in large-eddy simulations of neutrally stratified atmospheric boundary layers over heterogeneous terrain. Water Resources Research, 2006, 42, .	4.2	137
21	Field Measurements of Wind Turbine Wakes with Lidars. Journal of Atmospheric and Oceanic Technology, 2013, 30, 274-287.	1.3	133
22	Large Eddy Simulation of Vertical Axis Wind Turbine Wakes. Energies, 2014, 7, 890-912.	3.1	110
23	Wind-Turbine Wakes in a Convective Boundary Layer: A Wind-Tunnel Study. Boundary-Layer Meteorology, 2013, 146, 161-179.	2.3	108
24	The Effect of Free-Atmosphere Stratification on Boundary-Layer Flow and Power Output from Very Large Wind Farms. Energies, 2013, 6, 2338-2361.	3.1	97
25	Revisiting the Local Scaling Hypothesis in Stably Stratified Atmospheric Boundary-Layer Turbulence: an Integration of Field and Laboratory Measurements with Large-Eddy Simulations. Boundary-Layer Meteorology, 2006, 119, 473-500.	2.3	95
26	Wind sheltering of a lake by a tree canopy or bluff topography. Water Resources Research, 2010, 46, .	4.2	95
27	Volumetric Lidar Scanning of Wind Turbine Wakes under Convective and Neutral Atmospheric Stability Regimes. Journal of Atmospheric and Oceanic Technology, 2014, 31, 2035-2048.	1.3	94
28	Estimation of Power Spectra of Acoustic-Doppler Velocimetry Data Contaminated with Intermittent Spikes. Journal of Hydraulic Engineering, 2010, 136, 368-378.	1.5	91
29	Wind farm power optimization via yaw angle control: A wind tunnel study. Journal of Renewable and Sustainable Energy, 2019, 11, .	2.0	91
30	A Scale-Dependent Dynamic Model for Scalar Transport in Large-Eddy Simulations of the Atmospheric Boundary Layer. Boundary-Layer Meteorology, 2004, 112, 81-105.	2.3	90
31	Large-Eddy Simulation of the Stable Atmospheric Boundary Layer using Dynamic Models with Different Averaging Schemes. Boundary-Layer Meteorology, 2007, 126, 1-28.	2.3	89
32	Wake flow in a wind farm during a diurnal cycle. Journal of Turbulence, 2016, 17, 420-441.	1.4	84
33	A Priori Field Study of the Subgrid-Scale Heat Fluxes and Dissipation in the Atmospheric Surface Layer. Journals of the Atmospheric Sciences, 2001, 58, 2673-2698.	1.7	83
34	Analysis of control-oriented wake modeling tools using lidar field results. Wind Energy Science, 2018, 3, 819-831.	3.3	76
35	Wind Turbine Wake Characterization with Nacelle-Mounted Wind Lidars for Analytical Wake Model Validation. Remote Sensing, 2018, 10, 668.	4.0	75
36	Experimental investigation of vertical-axis wind-turbine wakes in boundary layer flow. Renewable Energy, 2018, 118, 1-13.	8.9	70

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37	Experimental study of wall boundary conditions for large-eddy simulation. Journal of Fluid Mechanics, 2001, 446, 309-320.	3.4	67
38	On the influence of gravel bed dynamics on velocity power spectra. Water Resources Research, 2010, 46, .	4.2	66
39	A new analytical model for wind farm power prediction. Journal of Physics: Conference Series, 2015, 625, 012039.	0.4	66
40	A new wake model and comparison of eight algorithms for layout optimization of wind farms in complex terrain. Applied Energy, 2020, 259, 114189.	10.1	65
41	A momentum-conserving wake superposition method for wind farm power prediction. Journal of Fluid Mechanics, 2020, 889, .	3.4	65
42	Effect of Roughness on Surface Boundary Conditions for Large-Eddy Simulation. Boundary-Layer Meteorology, 2006, 118, 169-187.	2.3	64
43	Large-Eddy Simulation of Very-Large-Scale Motions in the Neutrally Stratified Atmospheric Boundary Layer. Boundary-Layer Meteorology, 2015, 155, 397-416.	2.3	64
44	Flow Adjustment Inside and Around Large Finite-Size Wind Farms. Energies, 2017, 10, 2164.	3.1	63
45	A Large-Eddy Simulation Study of Vertical Axis Wind Turbine Wakes in the Atmospheric Boundary Layer. Energies, 2016, 9, 366.	3.1	62
46	Detached eddy simulation of flow around two wall-mounted cubes in tandem. International Journal of Heat and Fluid Flow, 2009, 30, 286-305.	2.4	61
47	Mean and turbulent kinetic energy budgets inside and above very large wind farms under conventionally-neutral condition. Renewable Energy, 2014, 70, 142-152.	8.9	61
48	3D Turbulence Measurements Using Three Synchronous Wind Lidars: Validation against Sonic Anemometry. Journal of Atmospheric and Oceanic Technology, 2014, 31, 1549-1556.	1.3	60
49	A new wind-farm parameterization for large-scale atmospheric models. Journal of Renewable and Sustainable Energy, 2015, 7, .	2.0	60
50	Adjustment of Turbulent Boundary-Layer Flow to Idealized Urban Surfaces: A Large-Eddy Simulation Study. Boundary-Layer Meteorology, 2015, 155, 249-270.	2.3	60
51	The role of coherent structures in subfilter-scale dissipation of turbulence measured in the atmospheric surface layer. Journal of Turbulence, 2004, 5, .	1.4	57
52	A New Miniature Wind Turbine for Wind Tunnel Experiments. Part I: Design and Performance. Energies, 2017, 10, 908.	3.1	57
53	A modulated gradient model for large-eddy simulation: Application to a neutral atmospheric boundary layer. Physics of Fluids, 2010, 22, .	4.0	55
54	An Analytical Model for the Effect of Vertical Wind Veer on Wind Turbine Wakes. Energies, 2018, 11, 1838.	3.1	55

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55	Evaluation of dynamic subgrid-scale models in large-eddy simulations of neutral turbulent flow over a two-dimensional sinusoidal hill. Atmospheric Environment, 2007, 41, 2719-2728.	4.1	53
56	Interaction between Large Wind Farms and the Atmospheric Boundary Layer. Procedia IUTAM, 2014, 10, 307-318.	1.2	52
57	Large-Eddy Simulation of Atmospheric Boundary-Layer Flow Through a Wind Farm Sited on Topography. Boundary-Layer Meteorology, 2017, 163, 1-17.	2.3	52
58	Realistic Wind Farm Layout Optimization through Genetic Algorithms Using a Gaussian Wake Model. Energies, 2018, 11, 3268.	3.1	52
59	Surface Heterogeneity Effects on Regional-Scale Fluxes in Stable Boundary Layers: Surface Temperature Transitions. Journals of the Atmospheric Sciences, 2009, 66, 412-431.	1.7	50
60	Turbulent flow and scalar transport through and over aligned and staggered wind farms. Journal of Turbulence, 2012, 13, N33.	1.4	48
61	Atmospheric stability effect on subgrid-scale physics for large-eddy simulation. Advances in Water Resources, 2001, 24, 1085-1102.	3.8	47
62	Synthetic turbulence, fractal interpolation, and large-eddy simulation. Physical Review E, 2004, 70, 026310.	2.1	46
63	Velocity and Surface Shear Stress Distributions Behind a Rough-to-Smooth Surface Transition: A Simple New Model. Boundary-Layer Meteorology, 2009, 130, 29-41.	2.3	43
64	Wind Turbine Wake Mitigation through Blade Pitch Offset. Energies, 2017, 10, 757.	3.1	43
65	Application of dynamic subgrid-scale concepts from large-eddy simulation to modeling landscape evolution. Water Resources Research, 2006, 42, .	4.2	42
66	Large-Eddy Simulation of Stably-Stratified Flow Over a Steep Hill. Boundary-Layer Meteorology, 2011, 138, 367-384.	2.3	42
67	Wind turbine wakes over hills. Journal of Fluid Mechanics, 2018, 855, 671-702.	3.4	40
68	Experimental investigation and analytical modelling of active yaw control for wind farm power optimization. Renewable Energy, 2021, 170, 1228-1244.	8.9	38
69	Coupled dynamics of the coâ€evolution of gravel bed topography, flow turbulence and sediment transport in an experimental channel. Journal of Geophysical Research, 2012, 117, .	3.3	37
70	Influence of the Coriolis force on the structure and evolution of wind turbine wakes. Physical Review Fluids, 2016, 1, .	2.5	37
71	Numerical Weather Prediction and Artificial Neural Network Coupling for Wind Energy Forecast. Energies, 2021, 14, 338.	3.1	36
72	A New Miniature Wind Turbine for Wind Tunnel Experiments. Part II: Wake Structure and Flow Dynamics. Energies, 2017, 10, 923.	3.1	34

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73	A wind-tunnel investigation of wind-turbine wakes in yawed conditions. Journal of Physics: Conference Series, 2015, 625, 012014.	0.4	33
74	Wind-tunnel study of surface boundary conditions for large-eddy simulation of turbulent flow past a rough-to-smooth surface transition. Journal of Turbulence, 2010, 11, N1.	1.4	32
75	A modulated gradient model for scalar transport in large-eddy simulation of the atmospheric boundary layer. Physics of Fluids, 2013, 25, .	4.0	32
76	On the Impact of Wind Farms on a Convective Atmospheric Boundary Layer. Boundary-Layer Meteorology, 2015, 157, 81-96.	2.3	32
77	Evaluating the modulated gradient model in large eddy simulation of channel flow with OpenFOAM. Journal of Turbulence, 2018, 19, 600-620.	1.4	31
78	Large-Eddy Simulation of Yawed Wind-Turbine Wakes: Comparisons with Wind Tunnel Measurements and Analytical Wake Models. Energies, 2019, 12, 4574.	3.1	31
79	Some Basic Properties of the Surrogate Subgrid-Scale Heat Flux in the Atmospheric Boundary Layer. Boundary-Layer Meteorology, 1998, 88, 425-444.	2.3	30
80	Experimental study of the impact of large-scale wind farms on landâ€“atmosphere exchanges. Environmental Research Letters, 2013, 8, 015002.	5.2	28
81	Effect of aspect ratio on vertical-axis wind turbine wakes. Journal of Fluid Mechanics, 2020, 889, .	3.4	28
82	A model for the effect of pressure gradient on turbulent axisymmetric wakes. Journal of Fluid Mechanics, 2018, 837, .	3.4	27
83	Subgrid-Scale Dissipation in the Atmospheric Surface Layer: Effects of Stability and Filter Dimension. Journal of Hydrometeorology, 2000, 1, 75-87.	1.9	26
84	A point vortex transportation model for yawed wind turbine wakes. Journal of Fluid Mechanics, 2020, 890, .	3.4	26
85	Large-Eddy Simulation of Atmospheric Boundary-Layer Flow Over Fluvial-Like Landscapes Using a Dynamic Roughness Model. Boundary-Layer Meteorology, 2012, 144, 263-286.	2.3	25
86	Subfilter-scale Fluxes over a Surface Roughness Transition. Part I: Measured Fluxes and Energy Transfer Rates. Boundary-Layer Meteorology, 2007, 126, 157-179.	2.3	24
87	A new boundary condition for large-eddy simulation of boundary-layer flow over surface roughness transitions. Journal of Turbulence, 2012, 13, N23.	1.4	24
88	A Simple Physically-Based Model for Wind-Turbine Wake Growth in a Turbulent Boundary Layer. Boundary-Layer Meteorology, 2018, 169, 1-10.	2.3	24
89	The effect of atmospheric stability on wind-turbine wakes: A large-eddy simulation study. Journal of Physics: Conference Series, 2014, 524, 012138.	0.4	23
90	Evaluation of subgrid-scale models in large-eddy simulation of flow past a two-dimensional block. International Journal of Heat and Fluid Flow, 2013, 44, 301-311.	2.4	22

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91	A Large-Eddy Simulation Study of Turbulent Flow Over Multiscale Topography. Boundary-Layer Meteorology, 2011, 141, 201-217.	2.3	19
92	Characterization of Wind Turbine Wakes with Nacelle-Mounted Doppler LiDARs and Model Validation in the Presence of Wind Veer. Remote Sensing, 2019, 11, 2247.	4.0	18
93	Lidar measurements of yawed-wind-turbine wakes: characterization and validation of analytical models. Wind Energy Science, 2020, 5, 1253-1272.	3.3	17
94	Mixture of Time Scales in Evaporation: Desorption and Selfâ€Similarity of Energy Fluxes. Agronomy Journal, 2000, 92, 832-836.	1.8	16
95	Wind Energy Prediction in Highly Complex Terrain by Computational Fluid Dynamics. Energies, 2019, 12, 1311.	3.1	16
96	Wind turbine wakes on escarpments: A wind-tunnel study. Renewable Energy, 2022, 181, 1258-1275.	8.9	16
97	An intercomparison of subgrid models for largeâ€eddy simulation of katabatic flows. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 1294-1303.	2.7	14
98	Large-Eddy Simulation of Wind Turbine Flows: A New Evaluation of Actuator Disk Models. Energies, 2021, 14, 3745.	3.1	13
99	An experimental investigation of a roof-mounted horizontal-axis wind turbine in an idealized urban environment. Renewable Energy, 2022, 193, 1049-1061.	8.9	13
100	On the Development of a Dynamic Non-linear Closure for Large-Eddy Simulation of the Atmospheric Boundary Layer. Boundary-Layer Meteorology, 2014, 151, 429-451.	2.3	12
101	Using a Virtual Lidar Approach to Assess the Accuracy of the Volumetric Reconstruction of a Wind Turbine Wake. Remote Sensing, 2018, 10, 721.	4.0	12
102	Volumetric scans of wind turbine wakes performed with three simultaneous wind LiDARs under different atmospheric stability regimes. Journal of Physics: Conference Series, 2014, 524, 012164.	0.4	11
103	Large-eddy simulation of the diurnal variation of wake flows in a finite-size wind farm. Journal of Physics: Conference Series, 2015, 625, 012031.	0.4	11
104	Turbulent planar wakes under pressure gradient conditions. Journal of Fluid Mechanics, 2017, 830, .	3.4	11
105	Power Maximization and Fatigue-Load Mitigation in a Wind-turbine Array by Active Yaw Control: an LES Study. Journal of Physics: Conference Series, 2020, 1618, 042036.	0.4	11
106	Field measurements of wake meandering at a utility-scale wind turbine with nacelle-mounted Doppler lidars. Wind Energy Science, 2022, 7, 185-199.	3.3	11
107	A physics-based model for wind turbine wake expansion in the atmospheric boundary layer. Journal of Fluid Mechanics, 2022, 943, .	3.4	11
108	Dynamic Models for the Subgrid-Scale Mixing of Reactants in Atmospheric Turbulent Reacting Flows. Journals of the Atmospheric Sciences, 2008, 65, 1692-1699.	1.7	10

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109	A Modulated-Gradient Parametrization for the Large-Eddy Simulation of the Atmospheric Boundary Layer Using the Weather Research and Forecasting Model. Boundary-Layer Meteorology, 2017, 165, 385-404.	2.3	10
110	Variability of wind turbine noise over a diurnal cycle. Renewable Energy, 2018, 126, 791-800.	8.9	10
111	Wind Farm Area Shape Optimization Using Newly Developed Multi-Objective Evolutionary Algorithms. Energies, 2021, 14, 4185.	3.1	10
112	A Simple Mixing-Length Model for Urban Canopy Flows. Boundary-Layer Meteorology, 2021, 181, 1-9.	2.3	10
113	Large-eddy simulation of flow and scalar dispersion in rural-to-urban transition regions. International Journal of Heat and Fluid Flow, 2016, 60, 47-60.	2.4	9
114	Shifts in wind energy potential following land-use driven vegetation dynamics in complex terrain. Science of the Total Environment, 2018, 639, 374-384.	8.0	9
115	Multirotor UAV-Based Platform for the Measurement of Atmospheric Turbulence: Validation and Signature Detection of Tip Vortices of Wind Turbine Blades. Journal of Atmospheric and Oceanic Technology, 2019, 36, 941-955.	1.3	9
116	Analytical Model for Mean Flow and Fluxes of Momentum and Energy in Very Large Wind Farms. Boundary-Layer Meteorology, 2018, 166, 31-49.	2.3	8
117	Subfilter-Scale Fluxes over a Surface Roughness Transition. Part II: A priori Study of Large-Eddy Simulation Models. Boundary-Layer Meteorology, 2008, 127, 73-95.	2.3	7
118	Evaluation of non-eddy viscosity subgrid-scale models in stratified turbulence using direct numerical simulations. European Journal of Mechanics, B/Fluids, 2017, 65, 168-178.	2.5	7
119	Numerical Framework for Aerodynamic Characterization of Wind Turbine Airfoils: Application to Miniature Wind Turbine WiRE-01. Energies, 2020, 13, 5612.	3.1	7
120	Instability of wind turbine wakes immersed in the atmospheric boundary layer. Journal of Physics: Conference Series, 2015, 625, 012034.	0.4	5
121	Intercomparison of terrain-following coordinate transformation and immersed boundary methods in large-eddy simulation of wind fields over complex terrain. Journal of Physics: Conference Series, 2016, 753, 082008.	0.4	4
122	Multi-rotor Wind Farm Layout Optimization. Journal of Physics: Conference Series, 2020, 1618, 032014.	0.4	4
123	Advective velocity and energy dissipation rate in an oscillatory flow. Water Research, 2005, 39, 2569-2578.	11.3	3
124	Three-dimensional wind-turbine wake characterization via tomographic particle-image velocimetry. Journal of Physics: Conference Series, 2020, 1618, 062045.	0.4	2
125	Channel Bed Slope Effect on the Height of Gravity Waves Produced by a Sudden Downstream Discharge Stoppage. Journal of Hydraulic Engineering, 2010, 136, 328-330.	1.5	1
126	Scale Model Evaluation and Optimization of Sodar Acoustic Baffles. Journal of Atmospheric and Oceanic Technology, 2015, 32, 507-517.	1.3	1

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127	Wind sheltering of a lake by a tree canopy or bluff topography. , 2010, .		1
128	Wind Turbine Wakes in Directionally Varying Wind Shears. Springer Proceedings in Physics, 2019, , 311-316.	0.2	1
129	A Gradient Tensorâ€“Based Subgrid-Scale Parameterization for Large-Eddy Simulations of Stratified Shear Layers Using the Weather Research and Forecasting Model. Monthly Weather Review, 2022, 150, 2279-2298.	1.4	1
130	Wind farm layout and unconstrained hub height optimization using genetic algorithms applied to different power densities. Journal of Physics: Conference Series, 2022, 2265, 042049.	0.4	0