Peter P Sullivan

List of Publications by Year
in descending order

Version: 2024-02-01

104 papers	8,491 citations	46918 47 h-index	45213 90 g-index
107 all docs	107 docs citations	107 times ranked	4442 citing authors

#	Article	IF	Citations
1	A Comparison of Shear- and Buoyancy-Driven Planetary Boundary Layer Flows. Journals of the Atmospheric Sciences, 1994, 51, 999-1022.	0.6	622
2	Langmuir turbulence in the ocean. Journal of Fluid Mechanics, 1997, 334, 1-30.	1.4	547
3	A subgrid-scale model for large-eddy simulation of planetary boundary-layer flows. Boundary-Layer Meteorology, 1994, 71, 247-276.	1.2	427
4	An Intercomparison of Large-Eddy Simulations of the Stable Boundary Layer. Boundary-Layer Meteorology, 2006, 118, 247-272.	1.2	417
5	Structure of the Entrainment Zone Capping the Convective Atmospheric Boundary Layer. Journals of the Atmospheric Sciences, 1998, 55, 3042-3064.	0.6	305
6	Dynamics of Winds and Currents Coupled to Surface Waves. Annual Review of Fluid Mechanics, 2010, 42, 19-42.	10.8	297
7	The Effect of Mesh Resolution on Convective Boundary Layer Statistics and Structures Generated by Large-Eddy Simulation. Journals of the Atmospheric Sciences, 2011, 68, 2395-2415.	0.6	263
8	Examining Two-Way Grid Nesting for Large Eddy Simulation of the PBL Using the WRF Model. Monthly Weather Review, 2007, 135, 2295-2311.	0.5	261
9	A global perspective on Langmuir turbulence in the ocean surface boundary layer. Geophysical Research Letters, 2012, 39, .	1.5	238
10	Simulation of turbulent flow over idealized water waves. Journal of Fluid Mechanics, 2000, 404, 47-85.	1.4	217
11	The Influence of Idealized Heterogeneity on Wet and Dry Planetary Boundary Layers Coupled to the Land Surface. Journals of the Atmospheric Sciences, 2005, 62, 2078-2097.	0.6	216
12	Surface gravity wave effects in the oceanic boundary layer: large-eddy simulation with vortex force and stochastic breakers. Journal of Fluid Mechanics, 2007, 593, 405-452.	1.4	211
13	Large-Eddy Simulations and Observations of Atmospheric Marine Boundary Layers above Nonequilibrium Surface Waves. Journals of the Atmospheric Sciences, 2008, 65, 1225-1245.	0.6	197
14	A grid nesting method for large-eddy simulation of planetary boundary-layer flows. Boundary-Layer Meteorology, 1996, 80, 167-202.	1.2	161
15	A Global Climatology of Windâ€“Wave Interaction. Journal of Physical Oceanography, 2010, 40, 1263-1282.	0.7	161
16	Large-Eddy Simulation Of The Stably Stratified Planetary Boundary Layer. Boundary-Layer Meteorology, 2000, 95, 1-30.	1.2	156
17	Large-Eddy Simulations of Radiatively Driven Convection: Sensitivities to the Representation of Small Scales. Journals of the Atmospheric Sciences, 1999, 56, 3963-3984.	0.6	155
18	The Coupled Boundary Layers and Airâ€“Sea Transfer Experiment in Low Winds. Bulletin of the American Meteorological Society, 2007, 88, 341-356.	1.7	154

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19	Vertical Mixing by Langmuir Circulations. Spill Science and Technology Bulletin, 2000, 6, 225-237.	0.4	146
20	Turbulent Statistics of Neutrally Stratified Flow Within and Above a Sparse Forest from Large-Eddy Simulation and Field Observations. Boundary-Layer Meteorology, 1998, 88, 363-397.	1.2	138
21	The Use of Large-Eddy Simulations in Lagrangian Particle Dispersion Models. Journals of the Atmospheric Sciences, 2004, 61, 2877-2887.	0.6	128
22	Structure of subfilter-scale fluxes in the atmospheric surface layer with application to large-eddy simulation modelling. Journal of Fluid Mechanics, 2003, 482, 101-139.	1.4	117
23	An evaluation of neutral and convective planetary boundary-layer parameterizations relative to large eddy simulations. Boundary-Layer Meteorology, 1996, 79, 131-175.	1.2	115
24	Atmospheric Stability Influences on Coupled Boundary Layer and Canopy Turbulence. Journals of the Atmospheric Sciences, 2016, 73, 1621-1647.	0.6	111
25	The Canopy Horizontal Array Turbulence Study. Bulletin of the American Meteorological Society, 2011, 92, 593-611.	1.7	109
26	The oceanic boundary layer driven by wave breaking with stochastic variability. Part 1. Direct numerical simulations. Journal of Fluid Mechanics, 2004, 507, 143-174.	1.4	108
27	The Wavy Ekman Layer: Langmuir Circulations, Breaking Waves, and Reynolds Stress. Journal of Physical Oceanography, 2012, 42, 1793-1816.	0.7	104
28	Parameterizing bubbleâ€mediated airâ€sea gas exchange and its effect on ocean ventilation. Global Biogeochemical Cycles, 2013, 27, 894-905.	1.9	100
29	Large-Eddy Simulation of Marine Atmospheric Boundary Layers above a Spectrum of Moving Waves. Journals of the Atmospheric Sciences, 2014, 71, 4001-4027.	0.6	96
30	Coherent structures and dynamics in a neutrally stratified planetary boundary layer flow. Physics of Fluids, 1996, 8, 2626-2639.	1.6	88
31	Transient Evolution of Langmuir Turbulence in Ocean Boundary Layers Driven by Hurricane Winds and Waves. Journal of Physical Oceanography, 2012, 42, 1959-1980.	0.7	86
32	Turbulent Winds and Temperature Fronts in Large-Eddy Simulations of the Stable Atmospheric Boundary Layer. Journals of the Atmospheric Sciences, 2016, 73, 1815-1840.	0.6	78
33	A Comparison of Higher-Order Vertical Velocity Moments in the Convective Boundary Layer from Lidar with In Situ Measurements and Large-Eddy Simulation. Boundary-Layer Meteorology, 2012, 143, 107-123.	1.2	73
34	Langmuir Turbulence in Swell. Journal of Physical Oceanography, 2014, 44, 870-890.	0.7	73
35	Frontogenesis and frontal arrest of a dense filament in the oceanic surface boundary layer. Journal of Fluid Mechanics, 2018, 837, 341-380.	1.4	73
36	Decaying Scalars Emitted By A Forest Canopy: A Numerical Study. Boundary-Layer Meteorology, 2001, 100, 91-129.	1.2	72

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37	Direct numerical simulation of wind-wave generation processes. Journal of Fluid Mechanics, 2008, 616, 1-30.	1.4	66
38	Rapid Mixed Layer Deepening by the Combination of Langmuir and Shear Instabilities: A Case Study. Journal of Physical Oceanography, 2010, 40, 2381-2400.	0.7	64
39	Wave Boundary Layer Turbulence over Surface Waves in a Strongly Forced Condition. Journal of Physical Oceanography, 2015, 45, 868-883.	0.7	64
40	HATS: Field Observations to Obtain Spatially Filtered Turbulence Fields from Crosswind Arrays of Sonic Anemometers in the Atmospheric Surface Layer*. Journals of the Atmospheric Sciences, 2004, 61, 1566-1581.	0.6	62
41	Comparing Ocean Surface Boundary Vertical Mixing Schemes Including Langmuir Turbulence. Journal of Advances in Modeling Earth Systems, 2019, 11, 3545-3592.	1.3	62
42	Including Radiative Effects in an Entrainment Rate Formula for Buoyancy-Driven PBLs. Journals of the Atmospheric Sciences, 1999, 56, 1031-1049.	0.6	55
43	Investigating 2D Modeling of Atmospheric Convection in the PBL. Journals of the Atmospheric Sciences, 2004, 61, 889-903.	0.6	52
44	Modification of near-wall coherent structures by inertial particles. Physics of Fluids, 2014, 26, .	1.6	52
45	Turbulent flow over water waves in the presence of stratification. Physics of Fluids, 2002, 14, 1182-1195.	1.6	51
46	Modeling bubbles and dissolved gases in the ocean. Journal of Geophysical Research, 2011, 116, .	3.3	50
47	Momentum transfer in a turbulent, particle-laden Couette flow. Physics of Fluids, 2013, 25, .	1.6	50
48	A refined view of vertical mass transport by cumulus convection. Geophysical Research Letters, 2008, 35, .	1.5	48
49	A Mixed Scheme for Subgrid-Scale Fluxes in Cloud-Resolving Models. Journals of the Atmospheric Sciences, 2010, 67, 3692-3705.	0.6	47
50	The effect of surface roughness on flow structures in a neutrally stratified planetary boundary layer flow. Physics of Fluids, 1997, 9, 3235-3249.	1.6	45
51	Turbulent Flow over Steep Steady and Unsteady Waves under Strong Wind Forcing. Journal of Physical Oceanography, 2018, 48, 3-27.	0.7	42
52	First synthesis of wind-profiler signals on the basis of large-eddy simulation data. Radio Science, 1999, 34, 1437-1459.	0.8	41
53	Convective boundaryâ€layer structure in the presence of windâ€following swell. Quarterly Journal of the Royal Meteorological Society, 2012, 138, 1476-1489.	1.0	40
54	Where is the Interface of the Stratocumulus-Topped PBL?. Journals of the Atmospheric Sciences, 2005, 62, 2626-2631.	0.6	38

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55	Sea surface drag and the role of spray. Geophysical Research Letters, 2013, 40, 656-660.	1.5	34
56	Impact of Swell on Airâ€“Sea Momentum Flux and Marine Boundary Layer under Low-Wind Conditions. Journals of the Atmospheric Sciences, 2016, 73, 2683-2697.	0.6	34
57	On the scaling of shear-driven entrainment: a DNS study. Journal of Fluid Mechanics, 2013, 732, 150-165.	1.4	33
58	Boundary Layer Turbulence over Surface Waves in a Strongly Forced Condition: LES and Observation. Journal of Physical Oceanography, 2019, 49, 1997-2015.	0.7	33
59	Inhibited upper ocean restratification in nonequilibrium swell conditions. Geophysical Research Letters, 2013, 40, 3672-3676.	1.5	32
60	Langmuir turbulence and filament frontogenesis in the oceanic surface boundary layer. Journal of Fluid Mechanics, 2019, 879, 512-553.	1.4	32
61	Horizontal Dispersion of Buoyant Materials in the Ocean Surface Boundary Layer. Journal of Physical Oceanography, 2018, 48, 2103-2125.	0.7	30
62	Large eddy simulation of the bubbly ocean: New insights on subsurface bubble distribution and bubbleâ€mediated gas transfer. Journal of Geophysical Research, 2012, 117, .	3.3	29
63	Langmuir Turbulence under Hurricane Gustav (2008). Journal of Physical Oceanography, 2015, 45, 657-677.	0.7	27
64	Statistical Variability of Dispersion in the Convective Boundary Layer: Ensembles of Simulations and Observations. Boundary-Layer Meteorology, 2012, 145, 185-210.	1.2	25
65	Second-Moment Budgets and Mixing Intensity in the Stably Stratified Atmospheric Boundary Layer over Thermally Heterogeneous Surfaces. Journals of the Atmospheric Sciences, 2016, 73, 449-464.	0.6	25
66	On the role of seaâ€state in bubbleâ€mediated airâ€sea gas flux during a winter storm. Journal of Geophysical Research: Oceans, 2017, 122, 2671-2685.	1.0	25
67	The effect of idealized water waves on the turbulence structure and kinetic energy budgets in the overlying airflow. Dynamics of Atmospheres and Oceans, 2005, 38, 147-171.	0.7	21
68	The Sea Spray Contribution to Sensible Heat Flux. Journals of the Atmospheric Sciences, 2014, 71, 640-654.	0.6	20
69	On the Influence of Swell Propagation Angle on Surface Drag. Journal of Applied Meteorology and Climatology, 2019, 58, 1039-1059.	0.6	19
70	Similarity Theory in the Surface Layer of Large-Eddy Simulations of the Wind-, Wave-, and Buoyancy-Forced Southern Ocean. Journal of Physical Oceanography, 2019, 49, 2165-2187.	0.7	19
71	A New Dynamical Subgrid Model for the Planetary Surface Layer. Part I: The Model and A Priori Tests. Journals of the Atmospheric Sciences, 2002, 59, 861-876.	0.6	16
72	Characterization of uncertainty in outdoor sound propagation predictions. Journal of the Acoustical Society of America, 2007, 121, EL177-EL183.	0.5	16

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73	Turbulent Transport of Spray Droplets in the Vicinity of Moving Surface Waves. Journal of Physical Oceanography, 2019, 49, 1789-1807.	0.7	16
74	Effects of Mesoscale Surface Thermal Heterogeneity on Low-Level Horizontal Wind Speeds. Boundary-Layer Meteorology, 2012, 143, 409-432.	1.2	15
75	Direct numerical simulation of top-down and bottom-up diffusion in the convective boundaryÂlayer. Journal of Fluid Mechanics, 2013, 724, 581-606.	1.4	15
76	A perturbation approach to understanding the effects of turbulence on frontogenesis. Journal of Fluid Mechanics, 0, 883, .	1.4	15
77	Application of a Subfilter-Scale Flux Model over the Ocean Using OHATS Field Data. Journals of the Atmospheric Sciences, 2009, 66, 3217-3225.	0.6	14
78	Effect of Planetary Rotation on Oceanic Surface Boundary Layer Turbulence. Journal of Physical Oceanography, 2018, 48, 2057-2080.	0.7	14
79	Impact of Breaking Wave Form Drag on Near-Surface Turbulence and Drag Coefficient over Young Seas at High Winds. Journal of Physical Oceanography, 2013, 43, 324-343.	0.7	13
80	A posteriori subgrid-scale model tests based on the conditional means of subgrid-scale stress and its production rate. Journal of Fluid Mechanics, 2009, 626, 149-181.	1.4	12
81	Large-Eddy Simulation Study of Log Laws in a Neutral Ekman Boundary Layer. Journals of the Atmospheric Sciences, 2018, 75, 1873-1889.	0.6	12
82	Interaction of Langmuir Turbulence and Inertial Currents in the Ocean Surface Boundary Layer under Tropical Cyclones. Journal of Physical Oceanography, 2018, 48, 1921-1940.	0.7	12
83	Airâ€Sea Heat and Momentum Fluxes in the Southern Ocean. Journal of Geophysical Research D: Atmospheres, 2019, 124, 12426-12443.	1.2	12
84	Suppression of CO₂ Outgassing by Gas Bubbles Under a Hurricane. Geophysical Research Letters, 2020, 47, e2020GL090249.	1.5	10
85	Turbulent Fluxes and Coherent Structures in Marine Boundary Layers: Investigations by Large-Eddy Simulation. Atmospheric and Oceanographic Sciences Library, 1999, , 507-538.	0.1	10
86	Impacts of wave age on turbulent flow and drag of steep waves. Procedia IUTAM, 2018, 26, 174-183.	1.2	9
87	Nonlocal Transport and Implied Viscosity and Diffusivity throughout the Boundary Layer in LES of the Southern Ocean with Surface Waves. Journal of Physical Oceanography, 2019, 49, 2631-2652.	0.7	9
88	Wind turbulence over misaligned surface waves and air-sea momentum flux. Part I: Waves following and opposing wind. Journal of Physical Oceanography, 2021, , .	0.7	9
89	Flux Attenuation due to Sensor Displacement over Sea. Journal of Atmospheric and Oceanic Technology, 2010, 27, 856-868.	0.5	7
90	Turbulent Airflow at Young Sea States with Frequent Wave Breaking Events: Large-Eddy Simulation. Journals of the Atmospheric Sciences, 2011, 68, 1290-1305.	0.6	7

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91	The effect of Langmuir turbulence under complex real oceanic and meteorological forcing. Ocean Modelling, 2020, 149, 101601.	1.0	7
92	Large-Eddy Simulation of Conditionally Neutral Boundary Layers: A Mesh Resolution Sensitivity Study. Journals of the Atmospheric Sciences, 2020, 77, 1969-1991.	0.6	7
93	A New Dynamical Subgrid Model for the Planetary Surface Layer. Part II: Analytical Computation of Fluxes, Mean Profiles, and Variances. Journals of the Atmospheric Sciences, 2002, 59, 877-891.	0.6	6
94	Impact of Dominant Breaking Waves on Airâ€“Sea Momentum Exchange and Boundary Layer Turbulence at High Winds. Journal of Physical Oceanography, 2014, 44, 1195-1212.	0.7	6
95	Wind turbulence over misaligned surface waves and air-sea momentum flux. Part II: Waves in oblique wind. Journal of Physical Oceanography, 2021, , .	0.7	6
96	Large-eddy simulations of cloud-topped mixed layers. , 2004, , 95-114.		5
97	Compact Representation of Large Eddy Simulations of the Atmospheric Boundary Layer Using Proper Orthogonal Decomposition. , 2010, , .		4
98	Using large-eddy simulation to investigate intermittency fluxes of clear-air radar reflectivity in the atmospheric boundary layer. , 2013, , .		4
99	Marine Boundary Layers above Heterogeneous SST: Alongfront Winds. Journals of the Atmospheric Sciences, 2021, 78, 3297-3315.	0.6	3
100	Two Examples from Geophysical and Astrophysical Turbulence on Modeling Disparate Scale Interactions. Handbook of Numerical Analysis, 2009, , 339-381.	0.9	2
101	The diurnal cycle of entrainment and detrainment in LES of the Southern Ocean driven by observed surface fluxes and waves. Journal of Physical Oceanography, 2021, , .	0.7	2
102	Offshore Marine Boundary-Layer Winds Predicted by a Large Eddy Simulation Model with Resolved Surface Waves. , 2011, , .		1
103	Concentration Fluctuations and Variability at Local and Regional Scales: Use of a Lagrangian Two-Particle Dispersion Model Coupled with LES Fields. Springer Proceedings in Complexity, 2018, , 281-285.	0.2	1
104	Surface-Wave Effects on Winds and Currents in Marine Boundary Layers. Lecture Notes in Physics, 2001, , 201-224.	0.3	0