Lian Shen

List of Publications by Citations

112 papers	1,604 citations	22 h-index	36 g-index
119 ext. papers	2,100 ext. citations	3.9 avg, IF	5.37 L-index

#	Paper	IF	Citations
112	Turbulent flow over a flexible wall undergoing a streamwise travelling wave motion. *Journal of Fluid Mechanics*, **2003**, 484, 197-221	3.7	131
111	The Coupled Boundary Layers and Air–Sea Transfer Experiment in Low Winds. *Bulletin of the American Meteorological Society*, **2007**, 88, 341-356	6.1	121
110	Direct-simulation-based study of turbulent flow over various waving boundaries. *Journal of Fluid Mechanics*, **2010**, 650, 131-180	3.7	86
109	The surface layer for free-surface turbulent flows. *Journal of Fluid Mechanics*, **1999**, 386, 167-212	3.7	72
108	Large-eddy simulation of free-surface turbulence. *Journal of Fluid Mechanics*, **2001**, 440, 75-116	3.7	55
107	Large-eddy simulation of offshore wind farm. *Physics of Fluids*, **2014**, 26, 025101	4.4	52
106	Simulation-based study of COVID-19 outbreak associated with air-conditioning in a restaurant. *Physics of Fluids*, **2021**, 33, 023301	4.4	51
105	Dynamic modelling of sea-surface roughness for large-eddy simulation of wind over ocean wavefield. *Journal of Fluid Mechanics*, **2013**, 726, 62-99	3.7	49
104	Effect of downwind swells on offshore wind energy harvesting – A large-eddy simulation study. *Renewable Energy*, **2014**, 70, 11-23	8.1	38
103	Interaction of a deformable free surface with statistically steady homogeneous turbulence. *Journal of Fluid Mechanics*, **2010**, 658, 33-62	3.7	37
102	CASPER: Coupled Air–Sea Processes and Electromagnetic Ducting Research. *Bulletin of the American Meteorological Society*, **2018**, 99, 1449-1471	6.1	36
101	Turbulent diffusion near a free surface. *Journal of Fluid Mechanics*, **2000**, 407, 145-166	3.7	36
100	Simulation of viscous flows with undulatory boundaries. Part I: Basic solver. *Journal of Computational Physics*, **2011**, 230, 5488-5509	4.1	33
99	Characteristics of coherent vortical structures in turbulent flows over progressive surface waves. *Physics of Fluids*, **2009**, 21, 125106	4.4	32
98	Direct numerical simulation of wind turbulence over breaking waves. *Journal of Fluid Mechanics*, **2018**, 850, 120-155	3.7	32
97	Simulating air entrainment and vortex dynamics in a hydraulic jump. *International Journal of Multiphase Flow*, **2015**, 72, 165-180	3.6	29
96	Simulation of viscous flows with undulatory boundaries: Part II. Coupling with other solvers for two-fluid computations. *Journal of Computational Physics*, **2011**, 230, 5510-5531	4.1	29

95	Numerical study of turbulent flow past a rotating axial-flow pump based on a level-set immersed boundary method. *Renewable Energy*, **2021**, 168, 960-971	8.1	29
94	Effect of wind turbine nacelle on turbine wake dynamics in large wind farms. *Journal of Fluid Mechanics*, **2019**, 869, 1-26	3.7	26
93	Idealized numerical simulation of breaking water wave propagating over a viscous mud layer. *Physics of Fluids*, **2012**, 24, 112104	4.4	25
92	Investigation of coupled air-water turbulent boundary layers using direct numerical simulations. *Physics of Fluids*, **2009**, 21, 062108	4.4	25
91	Fluid□tructure interaction simulation of floating structures interacting with complex, large-scale ocean waves and atmospheric turbulence with application to floating offshore wind turbines. *Journal of Computational Physics*, **2018**, 355, 144-175	4.1	24
90	The mechanism of vortex connection at a free surface. *Journal of Fluid Mechanics*, **1999**, 384, 207-241	3.7	20
89	Direct numerical simulation of scalar transport in turbulent flows over progressive surface waves. *Journal of Fluid Mechanics*, **2017**, 819, 58-103	3.7	19
88	Numerical simulation of sediment suspension and transport under plunging breaking waves. *Computers and Fluids*, **2017**, 158, 57-71	2.8	18
87	A Sharp-Interface Immersed Boundary Method for Simulating Incompressible Flows with Arbitrarily Deforming Smooth Boundaries. *International Journal of Computational Methods*, **2018**, 15, 1750080	1.1	18
86	Statistics of surface renewal of passive scalars in free-surface turbulence. *Journal of Fluid Mechanics* , **2011**, 678, 379-416	3.7	18
85	Patterns and statistics of in-water polarization under conditions of linear and nonlinear ocean surface waves. *Journal of Geophysical Research*, **2011**, 116,		18
84	On the generation and maintenance of waves and turbulence in simulations of free-surface turbulence. *Journal of Computational Physics*, **2009**, 228, 7313-7332	4.1	18
83	Numerical study of pressure forcing of wind on dynamically evolving water waves. *Physics of Fluids*, **2010**, 22, 041704	4.4	17
82	Complex modal analysis of the movements of swimming fish propelled by body and/or caudal fin. *Wave Motion*, **2018**, 78, 83-97	1.8	16
81	Numerical study of the effect of surface waves on turbulence underneath. Part 1. Mean flow and turbulence vorticity. *Journal of Fluid Mechanics*, **2013**, 733, 558-587	3.7	16
80	Effect of surfactants on free-surface turbulent flows. *Journal of Fluid Mechanics*, **2004**, 506, 79-115	3.7	16
79	Surface age of surface renewal in turbulent interfacial transport. *Geophysical Research Letters*, **2009** , 36,	4.9	15
78	Numerical study of the effect of surface wave on turbulence underneath. Part 2. Eulerian and Lagrangian properties of turbulence kinetic energy. *Journal of Fluid Mechanics*, **2014**, 744, 250-272	3.7	14

77	Introduction to special section on Recent Advances in the Study of Optical Variability in the Near-Surface and Upper Ocean. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		14
76	Transport of passive scalar in turbulent shear flow under a clean or surfactant-contaminated free surface. *Journal of Fluid Mechanics*, **2011**, 670, 527-557	3.7	14
75	Using machine learning to detect the turbulent region in flow past a circular cylinder. *Journal of Fluid Mechanics*, **2020**, 905,	3.7	14
74	Numerical investigation of vorticity and bubble clustering in an air entraining hydraulic jump. *Computers and Fluids*, **2018**, 172, 162-180	2.8	13
73	Wind□wave coupling study using LES of wind and phase-resolved simulation of nonlinear waves. *Journal of Fluid Mechanics*, **2019**, 874, 391-425	3.7	13
72	Mixing of a passive scalar near a free surface. *Physics of Fluids*, **2001**, 13, 913-926	4.4	12
71	Letter: The effects of streamwise system rotation on pressure fluctuations in a turbulent channel flow. *Physics of Fluids*, **2018**, 30, 091701	4.4	12
70	Numerical Study on the Generation and Transport of Spume Droplets in Wind over Breaking Waves. *Atmosphere*, **2017**, 8, 248	2.7	11
69	Life and death of inertial particle clusters in turbulence. *Journal of Fluid Mechanics*, **2020**, 902,	3.7	11
68	Multiresolution Large-Eddy Simulation of an Array of Hydrokinetic Turbines in a Field-Scale River: The Roosevelt Island Tidal Energy Project in New York City. *Water Resources Research*, **2018**, 54, 10,188	5.4	10
67	Study of wave effect on vorticity in Langmuir turbulence using wave-phase-resolved large-eddy simulation. *Journal of Fluid Mechanics*, **2019**, 875, 173-224	3.7	9
66	Numerical study of mechanisms of air-core vortex evolution in´an întake´flow. *International Journal of Heat and Fluid Flow*, **2020**, 81, 108517	2.4	9
65	High-fidelity simulations and field measurements for characterizing wind fields in a utility-scale wind farm. *Applied Energy*, **2021**, 281, 116115	10.7	9
64	Characteristics of turbulence transport for momentum and heat in particle-laden turbulent vertical channel flows. *Acta Mechanica Sinica/Lixue Xuebao*, **2017**, 33, 833-845	2	8
63	Numerical study on the dynamic process of single plume flow in thermal convection with polymers. *Physics of Fluids*, **2019**, 31, 023105	4.4	8
62	WRF modeling of PM remediation by SALSCS and its clean air flow over Beijing terrain. *Science of the Total Environment*, **2018**, 626, 134-146	10.2	8
61	Radiative transfer in ocean turbulence and its effect on underwater light field. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		8
60	Influence of Langmuir circulations on turbulence in the bottom boundary layer of shallow water. *Journal of Fluid Mechanics*, **2019**, 861, 275-308	3.7	8

59	A conservative scheme for simulation of free-surface turbulent and wave flows. *Journal of Computational Physics*, **2019**, 378, 18-43	4.1	7
58	Measurement-Based Numerical Study of the Effects of Realistic Land Topography and Stratification on the Coastal Marine Atmospheric Surface Layer. *Boundary-Layer Meteorology*, **2019**, 171, 289-314	3.4	7
57	An efficacious model for predicting icing-induced energy loss for wind turbines. *Applied Energy*, **2022**, 305, 117809	10.7	7
56	Simulation-based study of wind loads on semi-submersed object in ocean wave field. *Physics of Fluids*, **2016**, 28, 015106	4.4	6
55	Numerical Study on the Effect of Air–Sea–Land Interaction on the Atmospheric Boundary Layer in Coastal Area. *Atmosphere*, **2018**, 9, 51	2.7	6
54	Heat Transfer Modulation by Inertial Particles in Particle-Laden Turbulent Channel Flow. *Journal of Heat Transfer*, **2018**, 140,	1.8	6
53	Numerical study on the dissipation of water waves over a viscous fluid-mud layer. *Computers and Fluids*, **2017**, 158, 107-119	2.8	5
52	Impact of spray droplets on momentum and heat transport in a turbulent marine atmospheric boundary layer. *Theoretical and Applied Mechanics Letters*, **2019**, 9, 71-78	1.8	5
51	Steady laminar plume generated from a heated line in polymer solutions. *Physics of Fluids*, **2019**, 31, 103101	4.1	5
50	Coupled fluid-structure interaction simulation of floating offshore wind turbines and waves: a large eddy simulation approach. *Journal of Physics: Conference Series*, **2014**, 524, 012091	0.3	5
49	Surface wave effects on energy transfer in overlying turbulent flow. *Journal of Fluid Mechanics*, **2020**, 893,	3.7	5
48	A robust and accurate technique for Lagrangian tracking of bubbles and detecting fragmentation and coalescence. *International Journal of Multiphase Flow*, **2021**, 135, 103523	3.6	5
47	Relationship between wall shear stresses and streamwise vortices. *Applied Mathematics and Mechanics (English Edition)*, **2019**, 40, 381-396	3.2	4
46	A Numerical Study on the Development of Self-Similarity in a Wind Turbine Wake Using an Improved Pseudo-Spectral Large-Eddy Simulation Solver. *Energies*, **2019**, 12, 643	3.1	4
45	Free-surface turbulent wake behind towed ship models: experimental measurements, stability analyses and direct numerical simulations. *Journal of Fluid Mechanics*, **2002**, 469, 89-120	3.7	4
44	On the self-constraint mechanism of the cross-stream secondary flow in a streamwise-rotating channel. *Physics of Fluids*, **2020**, 32, 105115	4.4	4
43	A simulation-based mechanistic study of turbulent wind blowing over opposing water waves. *Journal of Fluid Mechanics*, **2020**, 901,	3.7	4
42	Large eddy simulation coupled with immersed boundary method for turbulent flows over a backward facing step. *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*, **2021**, 235, 2705-2714	1.3	4

41	Unsteady Reynolds-averaged Navier–Stokes investigation of free surface wave impact on tidal turbine wake. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2021**, 477, 20200703	2.4	4
40	Simulation-based study of wind-wave interaction. *Procedia IUTAM*, **2018**, 26, 162-173		4
39	An Assessment of Dynamic Subgrid-Scale Sea-Surface Roughness Models. *Flow, Turbulence and Combustion*, **2013**, 91, 541-563	2.5	3
38	Sustaining mechanism of Taylor–Görtler-like vortices in a streamwise-rotating channel flow. *Physical Review Fluids*, **2020**, 5,	2.8	3
37	Numerical study of effect of wave phase on Reynolds stresses and turbulent kinetic energy in Langmuir turbulence. *Journal of Fluid Mechanics*, **2020**, 904,	3.7	3
36	Interfacial mass transfer intensification with highly viscous mixture. *Chemical Engineering Science*, **2021**, 236, 116531	4.4	3
35	Wake Characteristics and Power Performance of a Drag-Driven in-Bank Vertical Axis Hydrokinetic Turbine. *Energies*, **2019**, 12, 3611	3.1	2
34	The principal stage in wind-wave generation. *Journal of Fluid Mechanics*, **2022**, 934,	3.7	2
33	Direct simulation of surface roughness signature of internal wave with deterministic energy-conservative model. *Journal of Fluid Mechanics*, **2020**, 891,	3.7	2
32	Simulation-Based Study on the COVID-19 Airborne Transmission in a Restaurant		2
31	A parallel cell-centered adaptive level set framework for efficient simulation of two-phase flows with subcycling and non-subcycling. *Journal of Computational Physics*, **2022**, 448, 110740	4.1	2
30	Investigation on the air-core vortex in a vertical hydraulic intake system. *Renewable Energy*, **2021**, 177, 1333-1345	8.1	2
29	Numerical simulation of interaction between multiphase flows and thin flexible structures. *Journal of Computational Physics*, **2022**, 448, 110691	4.1	2
28	Coherent vortical structures responsible for strong flux of scalar at free surface. *International Journal of Heat and Mass Transfer*, **2012**, 55, 5157-5170	4.9	1
27	Bubble production by air filament and cavity breakup in plunging breaking wave crests. *Journal of Fluid Mechanics*, **2021**, 929,	3.7	1
26	Mechanistic study of shoaling effect on momentum transfer between turbulent flow and traveling wave using large-eddy simulation. *Physical Review Fluids*, **2021**, 6,	2.8	1
25	Numerical investigation of ventilated cavitating flow in the wake of a circular cylinder. *Physical Review Fluids*, **2021**, 6,	2.8	1
24	A numerical and theoretical study of wind over fast-propagating water waves. *Journal of Fluid Mechanics*, **2021**, 919,	3.7	1

23	A Coupled Wind-Wave-Turbine Solver for Offshore Wind Farm **2018**,		1
22	A subcycling/non-subcycling time advancement scheme-based DLM immersed boundary method framework for solving single and multiphase fluid–structure interaction problems on dynamically adaptive grids. *Computers and Fluids*, **2022**, 238, 105358	2.8	1
21	Using Computer Simulations to Help Understand Flow Statistics and Structures at the Air-Ocean Interface. *Oceanography*, **2006**, 19, 52-63	2.3	0
20	Pore-Scale Flow Effects on Solute Transport in Turbulent Channel Flows Over Porous Media. *Transport in Porous Media*,1	3.1	0
19	A data-driven analysis of inhomogeneous wave field based on two-dimensional Hilbert–Huang transform. *Wave Motion*, **2022**, 110, 102896	1.8	0
18	A numerical simulation framework for bubbly flow and sound generation in laboratory-scale breaking waves. *JASA Express Letters*, **2021**, 1, 100801		0
17	Large-eddy simulation and Co-Design strategy for a drag-type vertical axis hydrokinetic turbine in open channel flows. *Renewable Energy*, **2022**, 181, 1305-1316	8.1	0
16	Numerical Study of Near-Surface Jet in the Atmospheric Surface Layer Over an Oceanic Temperature Front. *Journal of Geophysical Research D: Atmospheres*, **2021**, 126, e2020JD032934	4.4	0
15	Study of a hydrodynamic threshold system for controlling dinoflagellate blooms in reservoirs. *Environmental Pollution*, **2021**, 278, 116822	9.3	0
14	Direct numerical simulation of a stationary spherical particle in fluctuating inflows. *AIP Advances*, **2022**, 12, 025019	1.5	0
13	Spatial variability of global lake evaporation regulated by vertical vapor pressure difference. *Environmental Research Letters*,	6.2	0
12	CLASI: Coordinating Innovative Observations and Modeling to Improve Coastal Environmental Prediction Systems. *Bulletin of the American Meteorological Society*, **2022**, 103, E889-E898	6.1	0
11	Characteristics and mechanisms of air-core vortex meandering in a free-surface intake flow. *International Journal of Multiphase Flow*, **2022**, 152, 104070	3.6	0
10	Particle resolved simulation of sediment transport by a hybrid parallel approach. *International Journal of Multiphase Flow*, **2022**, 152, 104072	3.6	0
9	Flow modulation and heat transport of radiatively heated particles settling in Rayleigh–Bénard convection. *Computers and Fluids*, **2022**, 241, 105454	2.8	0
8	Safe zone for phase-resolved simulation of interactions between waves and vertically sheared currents. *Applied Mathematics Letters*, **2020**, 104, 106272	3.5	
7	Effects of operating condition on fish behavior and fish injury in an axial pump. *Science China Technological Sciences*,1	3.5	
6	Numerical Study of Turbulence–Wave Interaction. *Notes on Numerical Fluid Mechanics and Multidisciplinary Design*, **2010**, 37-49	0.3	

5	Numerical study on the effects of progressive gravity waves on turbulence. *Journal of Hydrodynamics*, **2016**, 28, 1011-1017	3.3
4	Simulation-based study of wind□wave interactions under various sea conditions. *Journal of Hydrodynamics*, **2019**, 31, 1148-1152	3.3
3	A high-order spectral method for effective simulation of surface waves interacting with an internal wave of large amplitude. *Ocean Modelling*, **2022**, 101996	3
2	Influence of Coriolis Parameter Variation on Langmuir Turbulence in the Ocean Upper Mixed Layer with Large Eddy Simulation. *Advances in Atmospheric Sciences*,1	2.9
1	A novel machine learning method for accelerated modeling of the downwelling irradiance field in the upper ocean. *Geophysical Research Letters*,	4.9