

Lian Shen

List of Publications by Year in descending order

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118
papers

2,606
citations

201385

27
h-index

233125

45
g-index

119
all docs

119
docs citations

119
times ranked

1579
citing authors

#	ARTICLE	IF	CITATIONS
1	Turbulent flow over a flexible wall undergoing a streamwise travelling wave motion. <i>Journal of Fluid Mechanics</i> , 2003, 484, 197-221.	1.4	156
2	The Coupled Boundary Layers and Air–Sea Transfer Experiment in Low Winds. <i>Bulletin of the American Meteorological Society</i> , 2007, 88, 341-356.	1.7	154
3	Direct-simulation-based study of turbulent flow over various waving boundaries. <i>Journal of Fluid Mechanics</i> , 2010, 650, 131-180.	1.4	114
4	Simulation-based study of COVID-19 outbreak associated with air-conditioning in a restaurant. <i>Physics of Fluids</i> , 2021, 33, 023301.	1.6	110
5	CASPER: Coupled Air–Sea Processes and Electromagnetic Ducting Research. <i>Bulletin of the American Meteorological Society</i> , 2018, 99, 1449-1471.	1.7	99
6	The surface layer for free-surface turbulent flows. <i>Journal of Fluid Mechanics</i> , 1999, 386, 167-212.	1.4	88
7	Numerical study of turbulent flow past a rotating axial-flow pump based on a level-set immersed boundary method. <i>Renewable Energy</i> , 2021, 168, 960-971.	4.3	74
8	Large-eddy simulation of offshore wind farm. <i>Physics of Fluids</i> , 2014, 26, .	1.6	72
9	Energy loss mechanism due to tip leakage flow of axial flow pump as turbine under various operating conditions. <i>Energy</i> , 2022, 255, 124532.	4.5	68
10	Large-eddy simulation of free-surface turbulence. <i>Journal of Fluid Mechanics</i> , 2001, 440, 75-116.	1.4	65
11	Dynamic modelling of sea-surface roughness for large-eddy simulation of wind over ocean wavefield. <i>Journal of Fluid Mechanics</i> , 2013, 726, 62-99.	1.4	64
12	Effect of downwind swells on offshore wind energy harvesting – A large-eddy simulation study. <i>Renewable Energy</i> , 2014, 70, 11-23.	4.3	59
13	Direct numerical simulation of wind turbulence over breaking waves. <i>Journal of Fluid Mechanics</i> , 2018, 850, 120-155.	1.4	51
14	Turbulent diffusion near a free surface. <i>Journal of Fluid Mechanics</i> , 2000, 407, 145-166.	1.4	47
15	Simulating air entrainment and vortex dynamics in a hydraulic jump. <i>International Journal of Multiphase Flow</i> , 2015, 72, 165-180.	1.6	47
16	Characteristics of coherent vortical structures in turbulent flows over progressive surface waves. <i>Physics of Fluids</i> , 2009, 21, .	1.6	45
17	Effect of wind turbine nacelle on turbine wake dynamics in large wind farms. <i>Journal of Fluid Mechanics</i> , 2019, 869, 1-26.	1.4	45
18	Simulation of viscous flows with undulatory boundaries. Part I: Basic solver. <i>Journal of Computational Physics</i> , 2011, 230, 5488-5509.	1.9	44

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19	Interaction of a deformable free surface with statistically steady homogeneous turbulence. <i>Journal of Fluid Mechanics</i> , 2010, 658, 33-62.	1.4	43
20	Simulation of viscous flows with undulatory boundaries: Part II. Coupling with other solvers for two-fluid computations. <i>Journal of Computational Physics</i> , 2011, 230, 5510-5531.	1.9	36
21	Using machine learning to detect the turbulent region in flow past a circular cylinder. <i>Journal of Fluid Mechanics</i> , 2020, 905, .	1.4	35
22	Fluid-structure interaction simulation of floating structures interacting with complex, large-scale ocean waves and atmospheric turbulence with application to floating offshore wind turbines. <i>Journal of Computational Physics</i> , 2018, 355, 144-175.	1.9	33
23	Complex modal analysis of the movements of swimming fish propelled by body and/or caudal fin. <i>Wave Motion</i> , 2018, 78, 83-97.	1.0	32
24	Wind-wave coupling study using LES of wind and phase-resolved simulation of nonlinear waves. <i>Journal of Fluid Mechanics</i> , 2019, 874, 391-425.	1.4	32
25	The mechanism of vortex connection at a free surface. <i>Journal of Fluid Mechanics</i> , 1999, 384, 207-241.	1.4	30
26	Idealized numerical simulation of breaking water wave propagating over a viscous mud layer. <i>Physics of Fluids</i> , 2012, 24, .	1.6	30
27	Life and death of inertial particle clusters in turbulence. <i>Journal of Fluid Mechanics</i> , 2020, 902, .	1.4	29
28	Investigation of coupled air-water turbulent boundary layers using direct numerical simulations. <i>Physics of Fluids</i> , 2009, 21, .	1.6	28
29	A Sharp-Interface Immersed Boundary Method for Simulating Incompressible Flows with Arbitrarily Deforming Smooth Boundaries. <i>International Journal of Computational Methods</i> , 2018, 15, 1750080.	0.8	27
30	Direct numerical simulation of scalar transport in turbulent flows over progressive surface waves. <i>Journal of Fluid Mechanics</i> , 2017, 819, 58-103.	1.4	26
31	Numerical simulation of sediment suspension and transport under plunging breaking waves. <i>Computers and Fluids</i> , 2017, 158, 57-71.	1.3	25
32	Patterns and statistics of in-water polarization under conditions of linear and nonlinear ocean surface waves. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	24
33	Numerical investigation of vorticity and bubble clustering in an air entraining hydraulic jump. <i>Computers and Fluids</i> , 2018, 172, 162-180.	1.3	23
34	Numerical study of pressure forcing of wind on dynamically evolving water waves. <i>Physics of Fluids</i> , 2010, 22, .	1.6	22
35	Numerical study of the effect of surface waves on turbulence underneath. Part 1. Mean flow and turbulence vorticity. <i>Journal of Fluid Mechanics</i> , 2013, 733, 558-587.	1.4	22
36	On the generation and maintenance of waves and turbulence in simulations of free-surface turbulence. <i>Journal of Computational Physics</i> , 2009, 228, 7313-7332.	1.9	21

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37	An efficacious model for predicting icing-induced energy loss for wind turbines. <i>Applied Energy</i> , 2022, 305, 117809.	5.1	20
38	Surface age of surface renewal in turbulent interfacial transport. <i>Geophysical Research Letters</i> , 2009, 36, .	1.5	19
39	Statistics of surface renewal of passive scalars in free-surface turbulence. <i>Journal of Fluid Mechanics</i> , 2011, 678, 379-416.	1.4	19
40	Transport of passive scalar in turbulent shear flow under a clean or surfactant-contaminated free surface. <i>Journal of Fluid Mechanics</i> , 2011, 670, 527-557.	1.4	19
41	Introduction to special section on Recent Advances in the Study of Optical Variability in the Near-Surface and Upper Ocean. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	19
42	Numerical study of mechanisms of air-core vortex evolution in an intake flow. <i>International Journal of Heat and Fluid Flow</i> , 2020, 81, 108517.	1.1	19
43	The principal stage in wind-wave generation. <i>Journal of Fluid Mechanics</i> , 2022, 934, .	1.4	19
44	High-fidelity simulations and field measurements for characterizing wind fields in a utility-scale wind farm. <i>Applied Energy</i> , 2021, 281, 116115.	5.1	18
45	Bubble production by air filament and cavity breakup in plunging breaking wave crests. <i>Journal of Fluid Mechanics</i> , 2021, 929, .	1.4	18
46	Effect of surfactants on free-surface turbulent flows. <i>Journal of Fluid Mechanics</i> , 2004, 506, 79-115.	1.4	17
47	Numerical study of the effect of surface wave on turbulence underneath. Part 2. Eulerian and Lagrangian properties of turbulence kinetic energy. <i>Journal of Fluid Mechanics</i> , 2014, 744, 250-272.	1.4	17
48	WRF modeling of PM2.5 remediation by SALSCS and its clean air flow over Beijing terrain. <i>Science of the Total Environment</i> , 2018, 626, 134-146.	3.9	17
49	Numerical Study on the Generation and Transport of Spume Droplets in Wind over Breaking Waves. <i>Atmosphere</i> , 2017, 8, 248.	1.0	16
50	Study of wave effect on vorticity in Langmuir turbulence using wave-phase-resolved large-eddy simulation. <i>Journal of Fluid Mechanics</i> , 2019, 875, 173-224.	1.4	16
51	Influence of Langmuir circulations on turbulence in the bottom boundary layer of shallow water. <i>Journal of Fluid Mechanics</i> , 2019, 861, 275-308.	1.4	16
52	A simulation-based mechanistic study of turbulent wind blowing over opposing water waves. <i>Journal of Fluid Mechanics</i> , 2020, 901, .	1.4	16
53	Surface wave effects on energy transfer in overlying turbulent flow. <i>Journal of Fluid Mechanics</i> , 2020, 893, .	1.4	16
54	Characteristics of turbulence transport for momentum and heat in particle-laden turbulent vertical channel flows. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2017, 33, 833-845.	1.5	15

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55	Study of a hydrodynamic threshold system for controlling dinoflagellate blooms in reservoirs. <i>Environmental Pollution</i> , 2021, 278, 116822.	3.7	15
56	Letter: The effects of streamwise system rotation on pressure fluctuations in a turbulent channel flow. <i>Physics of Fluids</i> , 2018, 30, .	1.6	14
57	Mixing of a passive scalar near a free surface. <i>Physics of Fluids</i> , 2001, 13, 913-926.	1.6	13
58	A conservative scheme for simulation of free-surface turbulent and wave flows. <i>Journal of Computational Physics</i> , 2019, 378, 18-43.	1.9	12
59	A numerical and theoretical study of wind over fast-propagating water waves. <i>Journal of Fluid Mechanics</i> , 2021, 919, .	1.4	12
60	Simulation-based study of wind-wave interaction. <i>Procedia IUTAM</i> , 2018, 26, 162-173.	1.2	11
61	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. <i>Water Resources Research</i> , 2018, 54, 10,188.	1.7	11
62	Numerical study on the dynamic process of single plume flow in thermal convection with polymers. <i>Physics of Fluids</i> , 2019, 31, 023105.	1.6	11
63	A robust and accurate technique for Lagrangian tracking of bubbles and detecting fragmentation and coalescence. <i>International Journal of Multiphase Flow</i> , 2021, 135, 103523.	1.6	11
64	Radiative transfer in ocean turbulence and its effect on underwater light field. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	10
65	Unsteady Reynolds-averaged Navier-Stokes investigation of free surface wave impact on tidal turbine wake. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2021, 477, 20200703.	1.0	10
66	Investigation on the air-core vortex in a vertical hydraulic intake system. <i>Renewable Energy</i> , 2021, 177, 1333-1345.	4.3	10
67	Free-surface turbulent wake behind towed ship models: experimental measurements, stability analyses and direct numerical simulations. <i>Journal of Fluid Mechanics</i> , 2002, 469, 89-120.	1.4	9
68	Numerical Study on the Effect of Air-Sea-Land Interaction on the Atmospheric Boundary Layer in Coastal Area. <i>Atmosphere</i> , 2018, 9, 51.	1.0	9
69	Heat Transfer Modulation by Inertial Particles in Particle-Laden Turbulent Channel Flow. <i>Journal of Heat Transfer</i> , 2018, 140, .	1.2	9
70	Steady laminar plume generated from a heated line in polymer solutions. <i>Physics of Fluids</i> , 2019, 31, .	1.6	9
71	Measurement-Based Numerical Study of the Effects of Realistic Land Topography and Stratification on the Coastal Marine Atmospheric Surface Layer. <i>Boundary-Layer Meteorology</i> , 2019, 171, 289-314.	1.2	9
72	Simulation-based study of wind loads on semi-submersed object in ocean wave field. <i>Physics of Fluids</i> , 2016, 28, .	1.6	8

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73	Numerical study on the dissipation of water waves over a viscous fluid-mud layer. <i>Computers and Fluids</i> , 2017, 158, 107-119.	1.3	8
74	Numerical study of effect of wave phase on Reynolds stresses and turbulent kinetic energy in Langmuir turbulence. <i>Journal of Fluid Mechanics</i> , 2020, 904, .	1.4	8
75	A parallel cell-centered adaptive level set framework for efficient simulation of two-phase flows with subcycling and non-subcycling. <i>Journal of Computational Physics</i> , 2022, 448, 110740.	1.9	8
76	Characteristics and mechanisms of air-core vortex meandering in a free-surface intake flow. <i>International Journal of Multiphase Flow</i> , 2022, 152, 104070.	1.6	8
77	A Numerical Study on the Development of Self-Similarity in a Wind Turbine Wake Using an Improved Pseudo-Spectral Large-Eddy Simulation Solver. <i>Energies</i> , 2019, 12, 643.	1.6	7
78	On the self-constraint mechanism of the cross-stream secondary flow in a streamwise-rotating channel. <i>Physics of Fluids</i> , 2020, 32, .	1.6	7
79	Numerical investigation of ventilated cavitating flow in the wake of a circular cylinder. <i>Physical Review Fluids</i> , 2021, 6, .	1.0	7
80	Interfacial mass transfer intensification with highly viscous mixture. <i>Chemical Engineering Science</i> , 2021, 236, 116531.	1.9	7
81	Particle resolved simulation of sediment transport by a hybrid parallel approach. <i>International Journal of Multiphase Flow</i> , 2022, 152, 104072.	1.6	7
82	Coupled fluid-structure interaction simulation of floating offshore wind turbines and waves: a large eddy simulation approach. <i>Journal of Physics: Conference Series</i> , 2014, 524, 012091.	0.3	6
83	Mechanistic study of shoaling effect on momentum transfer between turbulent flow and traveling wave using large-eddy simulation. <i>Physical Review Fluids</i> , 2021, 6, .	1.0	6
84	Numerical simulation of interaction between multiphase flows and thin flexible structures. <i>Journal of Computational Physics</i> , 2022, 448, 110691.	1.9	6
85	Sustaining mechanism of Taylor-Görtler-like vortices in a streamwise-rotating channel flow. <i>Physical Review Fluids</i> , 2020, 5, .	1.0	6
86	Pore-Scale Flow Effects on Solute Transport in Turbulent Channel Flows Over Porous Media. <i>Transport in Porous Media</i> , 2023, 146, 223-248.	1.2	6
87	CLASI: Coordinating Innovative Observations and Modeling to Improve Coastal Environmental Prediction Systems. <i>Bulletin of the American Meteorological Society</i> , 2022, 103, E889-E898.	1.7	6
88	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. <i>Computers and Fluids</i> , 2022, 238, 105358.	1.3	6
89	An Assessment of Dynamic Subgrid-Scale Sea-Surface Roughness Models. <i>Flow, Turbulence and Combustion</i> , 2013, 91, 541-563.	1.4	5
90	Impact of spray droplets on momentum and heat transport in a turbulent marine atmospheric boundary layer. <i>Theoretical and Applied Mechanics Letters</i> , 2019, 9, 71-78.	1.3	5

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91	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.	1.1	5
92	Direct simulation of surface roughness signature of internal wave with deterministic energy-conservative model. Journal of Fluid Mechanics, 2020, 891, .	1.4	5
93	Wake Characteristics and Power Performance of a Drag-Driven in-Bank Vertical Axis Hydrokinetic Turbine. Energies, 2019, 12, 3611.	1.6	4
94	Relationship between wall shear stresses and streamwise vortices. Applied Mathematics and Mechanics (English Edition), 2019, 40, 381-396.	1.9	4
95	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.	4.3	4
96	An improved adjoint-based ocean wave reconstruction and prediction method. Flow, 2022, 2, .	1.0	4
97	Direct numerical simulation of a stationary spherical particle in fluctuating inflows. AIP Advances, 2022, 12, .	0.6	4
98	Flow modulation and heat transport of radiatively heated particles settling in Rayleigh-Bénard convection. Computers and Fluids, 2022, 241, 105454.	1.3	4
99	Localizing effect of Langmuir circulations on small-scale turbulence in shallow water. Journal of Fluid Mechanics, 2020, 893, .	1.4	3
100	Analyses of wave-phase variation of Reynolds shear stress underneath surface wave using streamline coordinates. Journal of Fluid Mechanics, 2022, 931, .	1.4	3
101	Using Computer Simulations to Help Understand Flow Statistics and Structures at the Air-Ocean Interface. Oceanography, 2006, 19, 52-63.	0.5	2
102	A Coupled Wind-Wave-Turbine Solver for Offshore Wind Farm. , 2018, , .		2
103	A numerical simulation framework for bubbly flow and sound generation in laboratory-scale breaking waves. JASA Express Letters, 2021, 1, 100801.	0.5	2
104	A data-driven analysis of inhomogeneous wave field based on two-dimensional Hilbert-Huang transform. Wave Motion, 2022, 110, 102896.	1.0	2
105	Spatial variability of global lake evaporation regulated by vertical vapor pressure difference. Environmental Research Letters, 2022, 17, 054006.	2.2	2
106	Coherent vortical structures responsible for strong flux of scalar at free surface. International Journal of Heat and Mass Transfer, 2012, 55, 5157-5170.	2.5	1
107	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.	1.2	1
108	Influence of Coriolis Parameter Variation on Langmuir Turbulence in the Ocean Upper Mixed Layer with Large Eddy Simulation. Advances in Atmospheric Sciences, 2022, 39, 1487-1500.	1.9	1

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109	Asymmetric flow and mass transfer of twin-liquid films. International Journal of Heat and Mass Transfer, 2022, 194, 122912.	2.5	1
110	Numerical study on the effects of progressive gravity waves on turbulence. Journal of Hydrodynamics, 2016, 28, 1011-1017.	1.3	0
111	Simulation-based study of wind-wave interactions under various sea conditions. Journal of Hydrodynamics, 2019, 31, 1148-1152.	1.3	0
112	Safe zone for phase-resolved simulation of interactions between waves and vertically sheared currents. Applied Mathematics Letters, 2020, 104, 106272.	1.5	0
113	Effects of operating condition on fish behavior and fish injury in an axial pump. Science China Technological Sciences, 0, , 1.	2.0	0
114	Numerical Study of Turbulence-Wave Interaction. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2010, , 37-49.	0.2	0
115	On the convergence of solving a nonlinear Volterra-type integral equation for surface divergence based on surface thermal information. Mathematical Methods in the Applied Sciences, 0, , .	1.2	0
116	A high-order spectral method for effective simulation of surface waves interacting with an internal wave of large amplitude. Ocean Modelling, 2022, 173, 101996.	1.0	0
117	Bottom wall shear stress fluctuations in shallow-water Langmuir turbulence. Journal of Fluid Mechanics, 2022, 942, .	1.4	0
118	A novel machine learning method for accelerated modeling of the downwelling irradiance field in the upper ocean. Geophysical Research Letters, 0, , .	1.5	0