Wei-Xi Huang

List of Publications by Year
in descending order

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108 papers	2,626 citations	218677 26 h-index	214800 47 g-index
108 all docs	108 docs citations	108 times ranked	1481 citing authors

#	Article	IF	Citations
1	Simulation of flexible filaments in a uniform flow by the immersed boundary method. Journal of Computational Physics, 2007, 226, 2206-2228.	3.8	328
2	Three-dimensional simulation of a flapping flag in a uniform flow. Journal of Fluid Mechanics, 2010, 653, 301-336.	3.4	158
3	An immersed boundary method for fluidâ€“flexible structure interaction. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 2650-2661.	6.6	132
4	Assessment of regularized delta functions and feedback forcing schemes for an immersed boundary method. International Journal for Numerical Methods in Fluids, 2008, 58, 263-286.	1.6	119
5	Recent trends and progress in the immersed boundary method. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2019, 233, 7617-7636.	2.1	107
6	Constructive and destructive interaction modes between two tandem flexible flags in viscous flow. Journal of Fluid Mechanics, 2010, 661, 511-521.	3.4	105
7	Three-dimensional simulation of elastic capsules in shear flow by the penalty immersed boundary method. Journal of Computational Physics, 2012, 231, 3340-3364.	3.8	74
8	Simulation of liquid transfer between separating walls for modeling micro-gravure-offset printing. International Journal of Heat and Fluid Flow, 2008, 29, 1436-1446.	2.4	70
9	An improved penalty immersed boundary method for fluidâ€“flexible body interaction. Journal of Computational Physics, 2011, 230, 5061-5079.	3.8	67
10	Vortex shedding from a circular cylinder near a moving wall. Journal of Fluids and Structures, 2007, 23, 1064-1076.	3.4	59
11	Interaction modes of multiple flexible flags in a uniform flow. Journal of Fluid Mechanics, 2013, 729, 563-583.	3.4	50
12	Actively flapping tandem flexible flags in a viscous flow. Journal of Fluid Mechanics, 2015, 780, 120-142.	3.4	41
13	Transient response of Reynolds stress transport to spanwise wall oscillation in a turbulent channel flow. Physics of Fluids, 2005, 17, 018101-018101-4.	4.0	39
14	Simulation of swimming oblate jellyfish with a paddling-based locomotion. Journal of Fluid Mechanics, 2014, 748, 731-755.	3.4	39
15	A dynamic wall model for large eddy simulation of turbulent flow over complex/moving boundaries based on the immersed boundary method. Physics of Fluids, 2019, 31, .	4.0	38
16	An efficient immersed boundary projection method for flow over complex/moving boundaries. Computers and Fluids, 2016, 140, 122-135.	2.5	37
17	Improvement of mass source/sink for an immersed boundary method. International Journal for Numerical Methods in Fluids, 2007, 53, 1659-1671.	1.6	34
18	Self-propelled heaving and pitching flexible fin in a quiescent flow. International Journal of Heat and Fluid Flow, 2016, 62, 273-281.	2.4	34

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19	Dynamics of prolate jellyfish with a jet-based locomotion. Journal of Fluids and Structures, 2015, 57, 331-343.	3.4	33
20	Hydrodynamics of a three-dimensional self-propelled flexible plate. Physics of Fluids, 2019, 31, .	4.0	32
21	Active control for drag reduction of turbulent channel flow based on convolutional neural networks. Physics of Fluids, 2020, 32, .	4.0	32
22	Vortex dynamics and hydrodynamic performance enhancement mechanism in batoid fish oscillatory swimming. Journal of Fluid Mechanics, 2022, 930, .	3.4	32
23	On the role of vortical structures in aerodynamic performance of a hovering mosquito. Physics of Fluids, 2019, 31, .	4.0	29
24	On hairpin vortex generation from near-wall streamwise vortices. Acta Mechanica Sinica/Lixue Xuebao, 2015, 31, 139-152.	3.4	28
25	Non-monotonic effect of mass loading on turbulence modulations in particle-laden channel flow. Physics of Fluids, 2020, 32, .	4.0	28
26	Strengthened opposition control for skin-friction reduction in wall-bounded turbulent flows. Journal of Turbulence, 2014, 15, 122-143.	1.4	27
27	Large eddy simulation of flow and scalar transport in a vegetated channel. Environmental Fluid Mechanics, 2017, 17, 497-519.	1.6	27
28	Prediction of near-wall turbulence using minimal flow unit. Journal of Fluid Mechanics, 2018, 841, 654-673.	3.4	27
29	A Sharp-Interface Immersed Boundary Method for Simulating Incompressible Flows with Arbitrarily Deforming Smooth Boundaries. International Journal of Computational Methods, 2018, 15, 1750080.	1.3	27
30	Origin of effectiveness degradation in active drag reduction control of turbulent channel flow at Re_{Ï„}Â= 1000. Journal of Turbulence, 2016, 17, 758-786.	1.4	25
31	Vortex interactions between forewing and hindwing of dragonfly in hovering flight. Theoretical and Applied Mechanics Letters, 2015, 5, 24-29.	2.8	24
32	Data-driven construction of a reduced-order model for supersonic boundary layer transition. Journal of Fluid Mechanics, 2019, 874, 1096-1114.	3.4	24
33	Scaling of rough-wall turbulence by the roughness height and steepness. Journal of Fluid Mechanics, 2020, 900, .	3.4	24
34	Specialization of tuna: A numerical study on the function of caudal keels. Physics of Fluids, 2020, 32, .	4.0	22
35	Synergistic Effects of Chiral Morphology and Reconfiguration in Cattail Leaves. Journal of Bionic Engineering, 2015, 12, 634-642.	5.0	21
36	Effects of Taylor-GÃ¶rtler vortices on turbulent flows in a spanwise-rotating channel. Physics of Fluids, 2016, 28, .	4.0	21

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37	Numerical study on wetted and cavitating tip-vortical flows around an elliptical hydrofoil: Interplay of cavitation, vortices, and turbulence. Physics of Fluids, 2021, 33, .	4.0	21
38	Very large-scale motions in turbulent flows over streamwise traveling wavy boundaries. Physical Review Fluids, 2019, 4, .	2.5	21
39	Simulation of small swimmer motions driven by tail/flagellum beating. Computers and Fluids, 2012, 55, 109-117.	2.5	19
40	Amplitude modulation and extreme events in turbulent channel flow. Acta Mechanica Sinica/Lixue Xuebao, 2018, 34, 1-9.	3.4	19
41	Optical levitation of a non-spherical particle in a loosely focused Gaussian beam. Optics Express, 2012, 20, 24068.	3.4	17
42	Direct numerical simulation of turbulent flow in a rotating square duct. Physics of Fluids, 2015, 27, .	4.0	17
43	Active control for drag reduction in turbulent channel flow: the opposition control schemes revisited. Fluid Dynamics Research, 2016, 48, 055501.	1.3	16
44	Drag reduction in turbulent flow along a cylinder by circumferential oscillating Lorentz force. Physics of Fluids, 2019, 31, .	4.0	16
45	Coherent structures in streamwise rotating channel flow. Physics of Fluids, 2019, 31, .	4.0	16
46	Surface wave effects on energy transfer in overlying turbulent flow. Journal of Fluid Mechanics, 2020, 893, .	3.4	16
47	Direct numerical simulation of spatially developing turbulent boundary layers with opposition control. Fluid Dynamics Research, 2015, 47, 025503.	1.3	15
48	Direct numerical simulation of turbulent boundary layer over a compliant wall. Journal of Fluids and Structures, 2017, 71, 126-142.	3.4	15
49	Progression of heavy plates from stable falling to tumbling flight. Journal of Fluid Mechanics, 2018, 850, 1009-1031.	3.4	14
50	Flapping dynamics of a flexible flag in a uniform flow. Fluid Dynamics Research, 2014, 46, 055517.	1.3	13
51	On near-wall turbulence in minimal flow units. International Journal of Heat and Fluid Flow, 2017, 65, 192-199.	2.4	13
52	Drag reduction in turbulent flows along a cylinder by streamwise-travelling waves of circumferential wall velocity. Journal of Fluid Mechanics, 2019, 862, 75-98.	3.4	13
53	Prediction and optimisation of low-frequency discrete- and broadband-spectrum marine propeller forces. Applied Ocean Research, 2020, 98, 102114.	4.1	13
54	Swimming strategy of settling elongated micro-swimmers by reinforcement learning. Science China: Physics, Mechanics and Astronomy, 2020, 63, 1.	5.1	13

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55	Flexible ring flapping in a uniform flow. Journal of Fluid Mechanics, 2012, 707, 129-149.	3.4	12
56	Coherent structures in wall turbulence and mechanism for drag reduction control. Science China: Physics, Mechanics and Astronomy, 2013, 56, 1053-1061.	5.1	12
57	Wall-attached structures over a traveling wavy boundary: Turbulent velocity fluctuations. Physical Review Fluids, 2021, 6, .	2.5	12
58	A monolithic projection framework for constrained FSI problems with the immersed boundary method. Computer Methods in Applied Mechanics and Engineering, 2020, 371, 113332.	6.6	11
59	A hybrid immersed boundary/wall-model approach for large-eddy simulation of high-Reynolds-number turbulent flows. International Journal of Heat and Fluid Flow, 2021, 88, 108769.	2.4	11
60	Physical models and vortex dynamics of swimming and flying: a review. Acta Mechanica, 2022, 233, 1249-1288.	2.1	11
61	Optical separation of ellipsoidal particles in a uniform flow. Physics of Fluids, 2014, 26, 062001.	4.0	10
62	Fluidâ€“structure interactions with applications to biology. Acta Mechanica Sinica/Lixue Xuebao, 2016, 32, 977-979.	3.4	10
63	Numerical study of aircraft wake vortex evolution near ground in stable atmospheric boundary layer. Chinese Journal of Aeronautics, 2017, 30, 1866-1876.	5.3	10
64	Large-Eddy Simulation of Flow Over a Vegetation-Like Canopy Modelled as Arrays of Bluff-Body Elements. Boundary-Layer Meteorology, 2017, 165, 233-249.	2.3	10
65	Stability analysis of rotational dynamics of ellipsoids in simple shear flow. Physics of Fluids, 2019, 31, 023301.	4.0	10
66	Variations of flight patterns for falling flexible plates. Physics of Fluids, 2021, 33, .	4.0	10
67	Deep reinforcement learning for active control of flow over a circular cylinder with rotational oscillations. International Journal of Heat and Fluid Flow, 2022, 96, 109008.	2.4	10
68	An autonomous flexible propulsor in a quiescent flow. International Journal of Heat and Fluid Flow, 2017, 68, 151-157.	2.4	9
69	An improved penalty immersed boundary method for multiphase flow simulation. International Journal for Numerical Methods in Fluids, 2018, 88, 447-462.	1.6	9
70	Large-eddy simulation of three-dimensional aerofoil tip-gap flow. Ocean Engineering, 2022, 243, 110315.	4.3	9
71	Lateral migration of an elastic capsule by optical force in a uniform flow. Physical Review E, 2012, 86, 066306.	2.1	8
72	Effect of active control on optimal structures in wall turbulence. Science China: Physics, Mechanics and Astronomy, 2013, 56, 290-297.	5.1	8

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73	A ghost-cell immersed boundary method for large eddy simulation of flows in complex geometries. International Journal of Computational Fluid Dynamics, 2015, 29, 12-25.	1.2	8
74	Second-order curved interface treatments of the lattice Boltzmann method for convection-diffusion equations with conjugate interfacial conditions. Computers and Fluids, 2017, 144, 60-73.	2.5	8
75	Coupled states of dual side-by-side inverted flags in a uniform flow. Journal of Fluids and Structures, 2019, 91, 102768.	3.4	8
76	On rotational dynamics of a finite-sized ellipsoidal particle in shear flows. Acta Mechanica, 2019, 230, 449-467.	2.1	8
77	A self-propelled flexible plate with a keel-like structure. Physics of Fluids, 2021, 33, .	4.0	8
78	Vortical structures in the wake of falling plates. Journal of Visualization, 2019, 22, 15-24.	1.8	7
79	Transient growth in turbulent particle-laden channel flow. Acta Mechanica Sinica/Lixue Xuebao, 2020, 36, 1-11.	3.4	7
80	Rough-wall turbulence in minimal flow units with rod-roughened walls. Physics of Fluids, 2020, 32, 115120.	4.0	7
81	A composite model for complex building street configuration in a large eddy simulation of local urban atmospheric environment. Science China: Physics, Mechanics and Astronomy, 2011, 54, 716-723.	5.1	6
82	Transient response of enstrophy transport to opposition control in turbulent channel flow. Applied Mathematics and Mechanics (English Edition), 2013, 34, 127-138.	3.6	6
83	Direct numerical simulation of a turbulent boundary layer over an anisotropic compliant wall. Acta Mechanica Sinica/Lixue Xuebao, 2019, 35, 384-400.	3.4	6
84	The reduction of noise induced by flow over an open cavity. International Journal of Heat and Fluid Flow, 2020, 82, 108560.	2.4	6
85	Off-wall boundary conditions for large-eddy simulation based on near-wall turbulence prediction. Physics of Fluids, 2021, 33, 045125.	4.0	6
86	Scaling of rough-wall turbulence in a transitionally rough regime. Physics of Fluids, 2022, 34, .	4.0	6
87	Numerical model and hydrodynamic performance of tuna finlets. Theoretical and Applied Mechanics Letters, 2022, 12, 100322.	2.8	5
88	Relationship between wall shear stresses and streamwise vortices. Applied Mathematics and Mechanics (English Edition), 2019, 40, 381-396.	3.6	4
89	Spaceâ€“time characteristics of turbulence in minimal flow units. Physics of Fluids, 2020, 32, .	4.0	4
90	Wall-attached structures over a traveling wavy boundary: Scalar transport. Physics of Fluids, 2021, 33, 105115.	4.0	4

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91	Cross-type optical separation of elastic oblate capsules in a uniform flow. Journal of Applied Physics, 2015, 117, 034701.	2.5	3
92	Suboptimal control of wall turbulence with arrayed dimple actuators for drag reduction. Journal of Turbulence, 2016, 17, 379-399.	1.4	3
93	Effect of active control on linear transient growth in turbulent channel flow. Journal of Turbulence, 2017, 18, 203-218.	1.4	3
94	A near-wall predictive model for passive scalars using minimal flow unit. Physics of Fluids, 2021, 33, 045119.	4.0	3
95	Synthetic near-wall small-scale turbulence and its application in wall-modeled large-eddy simulation. Physics of Fluids, 2021, 33, 095102.	4.0	3
96	Evolutionary Optimisation for Reduction of the Low-Frequency Discrete-Spectrum Force of Marine Propeller Based on a Data-Driven Surrogate Model. Journal of Marine Science and Engineering, 2021, 9, 18.	2.6	3
97	Multiple Modes of Filament Flapping in a Uniform Flow. Chinese Physics Letters, 2012, 29, 094702.	3.3	2
98	Optimal transient growth in turbulent pipe flow. Applied Mathematics and Mechanics (English) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 46	3.6	2
99	Hydrodynamic design of an advanced submerged propulsion. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2019, 233, 6367-6382.	2.1	2
100	Assessment of force models on finite-sized particles at finite Reynolds numbers. Applied Mathematics and Mechanics (English Edition), 2020, 41, 953-966.	3.6	2
101	Migration of Elastic Capsules by an Optical Force in a Uniform flow. Procedia IUTAM, 2015, 16, 50-59.	1.2	1
102	Direct numerical simulation of turbulent flows through concentric annulus with circumferential oscillation of inner wall. Applied Mathematics and Mechanics (English Edition), 2018, 39, 1267-1276.	3.6	1
103	Linear optimal control of transient growth in turbulent channel flows. Acta Mechanica Sinica/Lixue Xuebao, 2019, 35, 729-739.	3.4	1
104	Flow-Induced Deformation of 3D Elastic Capsules. , 2011, , .		0
105	An Improved Penalty Immersed Boundary Method for Fluid-Flexible Body Interaction. , 2011, , .		0
106	Hydrodynamics of marine propulsion. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2019, 233, 6291-6292.	2.1	0
107	An improved spectral method and experimental tests for the low-frequency broadband noise of marine propellers. Journal of Marine Science and Technology, 2022, 27, 604-618.	2.9	0
108	Rescaling the near-wall predictive model for passive scalars in turbulent channel flow. Physics of Fluids, 2022, 34, .	4.0	0