

Kunihiko Taira

List of Publications by Year in descending order

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107
papers

4,787
citations

172207

29
h-index

98622

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109
all docs

109
docs citations

109
times ranked

2283
citing authors

#	ARTICLE	IF	CITATIONS
1	Modal Analysis of Fluid Flows: An Overview. <i>AIAA Journal</i> , 2017, 55, 4013-4041.	1.5	1,020
2	The immersed boundary method: A projection approach. <i>Journal of Computational Physics</i> , 2007, 225, 2118-2137.	1.9	472
3	Super-resolution reconstruction of turbulent flows with machine learning. <i>Journal of Fluid Mechanics</i> , 2019, 870, 106-120.	1.4	356
4	Three-dimensional flows around low-aspect-ratio flat-plate wings at low Reynolds numbers. <i>Journal of Fluid Mechanics</i> , 2009, 623, 187-207.	1.4	317
5	Modal Analysis of Fluid Flows: Applications and Outlook. <i>AIAA Journal</i> , 2020, 58, 998-1022.	1.5	301
6	A fast immersed boundary method using a nullspace approach and multi-domain far-field boundary conditions. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2008, 197, 2131-2146.	3.4	214
7	Machine-learning-based spatio-temporal super resolution reconstruction of turbulent flows. <i>Journal of Fluid Mechanics</i> , 2021, 909, .	1.4	126
8	Assessment of supervised machine learning methods for fluid flows. <i>Theoretical and Computational Fluid Dynamics</i> , 2020, 34, 497-519.	0.9	115
9	Resolvent-analysis-based design of airfoil separation control. <i>Journal of Fluid Mechanics</i> , 2019, 867, 572-610.	1.4	92
10	Network structure of two-dimensional decaying isotropic turbulence. <i>Journal of Fluid Mechanics</i> , 2016, 795, .	1.4	82
11	Global field reconstruction from sparse sensors with Voronoi tessellation-assisted deep learning. <i>Nature Machine Intelligence</i> , 2021, 3, 945-951.	8.3	79
12	Probabilistic neural networks for fluid flow surrogate modeling and data recovery. <i>Physical Review Fluids</i> , 2020, 5, .	1.0	68
13	Two-dimensional compressible viscous flow around a circular cylinder. <i>Journal of Fluid Mechanics</i> , 2015, 785, 349-371.	1.4	67
14	On the mechanism of trailing vortex wandering. <i>Journal of Fluid Mechanics</i> , 2016, 801, .	1.4	65
15	On the formation of three-dimensional separated flows over wings under tip effects. <i>Journal of Fluid Mechanics</i> , 2020, 895, .	1.4	57
16	Nonlinear Lift on a Triangular Airfoil in Low-Reynolds-Number Compressible Flow. <i>Journal of Aircraft</i> , 2015, 52, 924-931.	1.7	53
17	Effect of Tip Vortices in Low-Reynolds-Number Poststall Flow Control. <i>AIAA Journal</i> , 2009, 47, 749-756.	1.5	50
18	Vortex dynamics around pitching plates. <i>Physics of Fluids</i> , 2014, 26, .	1.6	47

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19	Computational Fluid Dynamics. , 2017, , .		47
20	Cluster-based feedback control of turbulent post-stall separated flows. Journal of Fluid Mechanics, 2019, 875, 345-375.	1.4	45
21	Network-theoretic approach to sparsified discrete vortex dynamics. Journal of Fluid Mechanics, 2015, 768, 549-571.	1.4	44
22	Special issue on machine learning and data-driven methods in fluid dynamics. Theoretical and Computational Fluid Dynamics, 2020, 34, 333-337.	0.9	44
23	Biglobal instabilities of compressible open-cavity flows. Journal of Fluid Mechanics, 2017, 826, 270-301.	1.4	42
24	The leading-edge vortex and quasisteady vortex shedding on an accelerating plate. Physics of Fluids, 2010, 22, .	1.6	40
25	Drag reduction on a flat-back ground vehicle with active flow control. Journal of Wind Engineering and Industrial Aerodynamics, 2015, 145, 292-303.	1.7	40
26	Randomized resolvent analysis. Physical Review Fluids, 2020, 5, .	1.0	38
27	A stable fluid-structure-interaction solver for low-density rigid bodies using the immersed boundary projection method. Journal of Computational Physics, 2016, 305, 300-318.	1.9	34
28	Detecting Vortex Formation and Shedding in Cylinder Wakes Using Lagrangian Coherent Structures. AIAA Journal, 2017, 55, 15-23.	1.5	33
29	Phase-response analysis of synchronization for periodic flows. Journal of Fluid Mechanics, 2018, 846, .	1.4	32
30	Effects of Sidewalls and Leading-Edge Blowing on Flows over Long Rectangular Cavities. AIAA Journal, 2019, 57, 106-119.	1.5	29
31	Unsteadiness in Flow over a Flat Plate at Angle-of-Attack at Low Reynolds Numbers. , 2007, , .		26
32	A parallel stability analysis of a trailing vortex wake. Journal of Fluid Mechanics, 2018, 837, 858-895.	1.4	26
33	Resolvent analysis of an airfoil laminar separation bubble at $Re = 100$. Physical Review Fluids, 2020, 5, .	1.0	26
34	Stabilization of Ill-Posed Problems Through Thermal Rate Sensors. Journal of Thermophysics and Heat Transfer, 2006, 20, 238-246.	0.9	25
35	Network community-based model reduction for vortical flows. Physical Review E, 2018, 97, 063103.	0.8	24
36	Suppression of Cavity Flow Oscillations via Three-Dimensional Steady Blowing. AIAA Journal, 2019, 57, 90-105.	1.5	24

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37	On the lock-on of vortex shedding to oscillatory actuation around a circular cylinder. <i>Physics of Fluids</i> , 2013, 25, .	1.6	23
38	Airfoil-Wake Modification with Gurney Flap at Low Reynolds Number. <i>AIAA Journal</i> , 2018, 56, 1348-1359.	1.5	22
39	Unsteady control of supersonic turbulent cavity flow based on resolvent analysis. <i>Journal of Fluid Mechanics</i> , 2021, 925, .	1.4	22
40	Active flow control for drag reduction of a plunging airfoil under deep dynamic stall. <i>Physical Review Fluids</i> , 2019, 4, .	1.0	22
41	Active attenuation of a trailing vortex inspired by a parabolized stability analysis. <i>Journal of Fluid Mechanics</i> , 2018, 855, .	1.4	21
42	Laminar separated flows over finite-aspect-ratio swept wings. <i>Journal of Fluid Mechanics</i> , 2020, 905, .	1.4	21
43	In-Phase Error Estimation of Experimental Data and Optimal First Derivatives. <i>AIAA Journal</i> , 2004, 42, 1017-1024.	1.5	19
44	Networked-oscillator-based modeling and control of unsteady wake flows. <i>Physical Review E</i> , 2018, 97, 063107.	0.8	19
45	Lift Enhancement for Low-Aspect-Ratio Wings with Periodic Excitation. <i>AIAA Journal</i> , 2010, 48, 1785-1790.	1.5	18
46	Resolvent Analysis of Compressible Laminar and Turbulent Cavity Flows. <i>AIAA Journal</i> , 2020, 58, 1046-1055.	1.5	18
47	Resolvent analysis on the origin of two-dimensional transonic buffet. <i>Journal of Fluid Mechanics</i> , 2020, 885, .	1.4	17
48	Transition, intermittency and phase interference effects in airfoil secondary tones and acoustic feedback loop. <i>Journal of Fluid Mechanics</i> , 2022, 937, .	1.4	17
49	Control of Three-Dimensional Cavity Flow Using Leading-Edge Slot Blowing. , 2015, , .		16
50	Effects of Wall-Normal and Angular Momentum Injections in Airfoil Separation Control. <i>AIAA Journal</i> , 2018, 56, 1830-1842.	1.5	16
51	Identifying vortical network connectors for turbulent flow modification. <i>Journal of Fluid Mechanics</i> , 2021, 915, .	1.4	16
52	Unsteady Aerodynamic Forces on Small-Scale Wings: Experiments, Simulations, and Models. , 2008, , .		15
53	Spanwise effects on instabilities of compressible flow over a long rectangular cavity. <i>Theoretical and Computational Fluid Dynamics</i> , 2017, 31, 555-565.	0.9	14
54	Phase-synchronization properties of laminar cylinder wake for periodic external forcings. <i>Journal of Fluid Mechanics</i> , 2020, 904, .	1.4	14

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55	Network broadcast analysis and control of turbulent flows. Journal of Fluid Mechanics, 2021, 910, .	1.4	14
56	Sparsifying the resolvent forcing mode via gradient-based optimisation. Journal of Fluid Mechanics, 2022, 944, .	1.4	13
57	Thermoacoustic modeling and uncertainty analysis of two-dimensional conductive membranes. Journal of Applied Physics, 2015, 117, .	1.1	12
58	Laminar free shear layer modification using localized periodic heating. Journal of Fluid Mechanics, 2017, 822, 561-589.	1.4	12
59	Temporal-Harmonic Specific POD Mode Extraction. , 2008, , .		11
60	Numerical Simulations of Subsonic and Transonic Open-Cavity Flows. , 2014, , .		11
61	Width and sidewall effects on high speed cavity flows. , 2016, , .		11
62	Laminar vortex dynamics around forward-swept wings. Physical Review Fluids, 2022, 7, .	1.0	11
63	Linear modal instabilities around post-stall swept finite wings at low Reynolds numbers. Journal of Fluid Mechanics, 2022, 944, .	1.4	11
64	Suppression of Cavity Oscillations via Three-Dimensional Steady Blowing. , 2015, , .		10
65	Network-based analysis of fluid flows: Progress and outlook. Progress in Aerospace Sciences, 2022, 131, 100823.	6.3	10
66	Closed-Loop Control of Vortex Shedding on a Two-Dimensional Flat-Plate Airfoil at a Low Reynolds Number. , 2008, , .		9
67	Correction: Modal Analysis of Fluid Flows: An Overview. AIAA Journal, 2020, 58, AU9-AU9.	1.5	9
68	Phase-based control of periodic flows. Journal of Fluid Mechanics, 2021, 927, .	1.4	9
69	Modal Analysis of Fluid Flow: Introduction to the Virtual Collection. AIAA Journal, 2020, 58, 991-993.	1.5	8
70	Phase-locking of laminar wake to periodic vibrations of a circular cylinder. Physical Review Fluids, 2021, 6, .	1.0	7
71	On the Influence of Pitching and Acceleration on Vortex Dynamics Around Low-Aspect-Ratio Rectangular Wing. , 2013, , .		6
72	Drag Reduction Control for Flow over a Hump with Surface-Mounted Thermoacoustic Actuator. , 2015, , .		6

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73	Use of local periodic heating for separation control on a NACA 0012 airfoil. , 2017, , .		6
74	Core-pressure alleviation for a wall-normal vortex by active flow control. Journal of Fluid Mechanics, 2018, 853, .	1.4	6
75	Data-driven time-dependent state estimation for interfacial fluid mechanics in evaporating droplets. Scientific Reports, 2021, 11, 13579.	1.6	6
76	Phase-reduction analysis of periodic thermoacoustic oscillations in a Rijke tube. Journal of Fluid Mechanics, 2022, 933, .	1.4	6
77	Immersed Boundary Methods. , 2017, , 179-205.		5
78	Resolvent Analysis of Compressible Flow over a Long Rectangular Cavity. , 2018, , .		5
79	Randomized methods to characterize large-scale vortical flow networks. PLoS ONE, 2019, 14, e0225265.	1.1	5
80	Synchronized Velocity and Pressure Measurements of Supersonic Flow over a Finite Span Cavity with Leading Edge Slot Blowing. , 2016, , .		4
81	Supersonic Cavity Flow Control Using a Spanwise Array of Leading-Edge Tabs. Journal of Aircraft, 2022, 59, 788-798.	1.7	4
82	Fast Approximated POD for a Flat Plate Benchmark with a Time Varying Angle of Attack. , 2008, , .		3
83	Feedback Control of High-Lift State for A Low-Aspect-Ratio Wing. , 2010, , .		3
84	Separation control on NACA 0012 airfoil using momentum and wall-normal vorticity injection. , 2014, , .		3
85	Wake Dynamics of Finite Aspect Ratio Wings. Part III: TriGlobal Linear Stability Analysis. , 2019, , .		3
86	Lock-On to a High-Lift State with Oscillatory Forcing in a Three-Dimensional Wake Flow. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2010, , 81-93.	0.2	3
87	Active Flow Control of a Pump-Induced Wall-Normal Vortex With Steady Blowing. Journal of Fluids Engineering, Transactions of the ASME, 2020, 142, .	0.8	3
88	Sketch-Based Resolvent Analysis. , 2022, , .		3
89	Extraction of DMD modes from Pulse-Burst PIV Data of Flow over an Open Cavity. , 2020, , .		2
90	Erratum on Effect of Tip Vortices in Low-Reynolds-Number Poststall Flow Control. AIAA Journal, 2010, 48, 702-702.	1.5	1

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91	Surface vorticity flux analysis in separation control on NACA 0012 airfoil. , 2015, , .		1
92	Numerical Simulation of Turbulent Flows. , 2017, , 207-235.		1
93	Sparsification of long range force networks for molecular dynamics simulations. PLoS ONE, 2019, 14, e0213262.	1.1	1
94	Wake Dynamics of Finite Aspect Ratio Wings. Part II: Computational Study. , 2019, , .		1
95	From biglobal to triglobal resolvent analysis: laminar separated flows over swept wings. , 2022, , .		1
96	Machine-learning-based reconstruction of transient vortex-airfoil wake interaction. , 2022, , .		1
97	In-Phase Error Estimation of Experimental Data and Optimal First Derivatives. , 2003, , .		0
98	Integral equation formulation and error estimates for radial flow between two flat disks. Journal of Computational and Applied Mathematics, 2005, 181, 103-124.	1.1	0
99	On the Effect of Tip Vortices in Low-Reynolds-Number Post-Stall Flow Control. , 2009, , .		0
100	Parameter Studies on Rotational and Translational Accelerations of Flat Plates. , 2013, , .		0
101	Thermoacoustic Modeling of a Graphene-Based Actuator. , 2014, , .		0
102	Low Reynolds number wake modification using a Gurney flap. , 2017, , .		0
103	Wake Dynamics of Finite Aspect Ratio Wings. Part I: An Experimental Study. , 2019, , .		0
104	Integrated Toolkit for Closed-Loop Flow Control: Flow Simulation, Reduced-Order Modeling, and Control Design (Invited). , 2008, , .		0
105	Aerodynamic Force Modeling for Unsteady Wing Maneuvers. , 2014, , .		0
106	Aerodynamic characterization of low-aspect-ratio swept wings at Re=400. , 2022, , .		0
107	Cluster-based analysis of an SUV wake. , 2022, , .		0