Haecheon Choi

List of Publications by Year
in descending order

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144	11,621	36203	27345
papers	citations	51 h-index	106 g-index

147	147	147	5424
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	An Immersed-Boundary Finite-Volume Method for Simulations of Flow in Complex Geometries. Journal of Computational Physics, 2001, 171, 132-150.	1.9	957
2	Control of Flow Over a Bluff Body. Annual Review of Fluid Mechanics, 2008, 40, 113-139.	10.8	769
3	Active turbulence control for drag reduction in wall-bounded flows. Journal of Fluid Mechanics, 1994, 262, 75-110.	1.4	647
4	Direct numerical simulation of turbulent flow over riblets. Journal of Fluid Mechanics, 1993, 255, 503.	1.4	585
5	Grid-point requirements for large eddy simulation: Chapmanâ€™s estimates revisited. Physics of Fluids, 2012, 24, .	1.6	501
6	Effects of the Computational Time Step on Numerical Solutions of Turbulent Flow. Journal of Computational Physics, 1994, 113, 1-4.	1.9	494
7	Control of laminar vortex shedding behind a circular cylinder using splitter plates. Physics of Fluids, 1996, 8, 479-486.	1.6	330
8	Numerical solutions of flow past a circular cylinder at Reynolds numbers up to 160. Journal of Mechanical Science and Technology, 1998, 12, 1200-1205.	0.4	306
9	Laminar flow past a rotating circular cylinder. Physics of Fluids, 1999, 11, 3312-3321.	1.6	254
10	Drag reduction by polymer additives in a turbulent channel flow. Journal of Fluid Mechanics, 2003, 486, 213-238.	1.4	224
11	Feedback control for unsteady flow and its application to the stochastic Burgers equation. Journal of Fluid Mechanics, 1993, 253, 509.	1.4	212
12	Direct numerical simulation of turbulent supercritical flows with heat transfer. Physics of Fluids, 2005, 17, 105104.	1.6	202
13	Suboptimal control of turbulent channel flow for drag reduction. Journal of Fluid Mechanics, 1998, 358, 245-258.	1.4	184
14	Immersed boundary method for flow around an arbitrarily moving body. Journal of Computational Physics, 2006, 212, 662-680.	1.9	181
15	Distributed forcing of flow over a circular cylinder. Physics of Fluids, 2005, 17, 033103.	1.6	176
16	A Second-Order Time-Accurate Finite Volume Method for Unsteady Incompressible Flow on Hybrid Unstructured Grids. Journal of Computational Physics, 2000, 162, 411-428.	1.9	171
17	On the relation of nearâ€wall streamwise vortices to wall skin friction in turbulent boundary layers. Physics of Fluids A, Fluid Dynamics, 1993, 5, 3307-3309.	1.6	169
18	On the spaceâ€time characteristics of wallâ€pressure fluctuations. Physics of Fluids A, Fluid Dynamics, 1990, 2, 1450-1460.	1.6	167

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19	Mechanism of drag reduction by dimples on a sphere. Physics of Fluids, 2006, 18, 041702.	1.6	166
20	Very Large-Scale Structures and Their Effects on the Wall Shear-Stress Fluctuations in a Turbulent Channel Flow up to Reï„=640. Journal of Fluids Engineering, Transactions of the ASME, 2004, 126, 835-843.	0.8	149
21	Sources of spurious force oscillations from an immersed boundary method for moving-body problems. Journal of Computational Physics, 2011, 230, 2677-2695.	1.9	148
22	An immersed-boundary finite-volume method for simulation of heat transfer in complex geometries. Journal of Mechanical Science and Technology, 2004, 18, 1026-1035.	0.4	143
23	Effects of uniform blowing or suction from a spanwise slot on a turbulent boundary layer flow. Physics of Fluids, 1999, 11, 3095-3105.	1.6	136
24	Suboptimal feedback control of vortex shedding at low Reynolds numbers. Journal of Fluid Mechanics, 1999, 401, 123-156.	1.4	133
25	Aerodynamics of Heavy Vehicles. Annual Review of Fluid Mechanics, 2014, 46, 441-468.	10.8	132
26	Direct numerical simulation of turbulent thermal boundary layers. Physics of Fluids, 2000, 12, 2555.	1.6	125
27	Magnetohydrodynamic turbulent flow in a channel at low magnetic Reynolds number. Journal of Fluid Mechanics, 2001, 439, 367-394.	1.4	125
28	Vortical structures behind a sphere at subcritical Reynolds numbers. Physics of Fluids, 2006, 18, 015102.	1.6	119
29	Drag reduction in flow over a two-dimensional bluff body with a blunt trailing edge using a new passive device. Journal of Fluid Mechanics, 2006, 563, 389.	1.4	115
30	Characteristics of flow over a rotationally oscillating cylinder at low Reynolds number. Physics of Fluids, 2002, 14, 2767-2777.	1.6	109
31	A dynamic subgrid-scale eddy viscosity model with a global model coefficient. Physics of Fluids, 2006, 18, 125109.	1.6	103
32	Large eddy simulation of a circular jet: effect of inflow conditions on the near field. Journal of Fluid Mechanics, 2009, 620, 383-411.	1.4	96
33	Immersed boundary methods for fluid-structure interaction: A review. International Journal of Heat and Fluid Flow, 2019, 75, 301-309.	1.1	93
34	A fractional four-step finite element formulation of the unsteady incompressible Navier-Stokes equations using SUPG and linear equal-order element methods. Computer Methods in Applied Mechanics and Engineering, 1997, 143, 333-348.	3.4	89
35	Active wall motions for skin-friction drag reduction. Physics of Fluids, 2000, 12, 3301-3304.	1.6	89
36	Maximum drag reduction in a turbulent channel flow by polymer additives. Journal of Fluid Mechanics, 2003, 492, 91-100.	1.4	88

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37	Instantaneous control of backward-facing step flows. Applied Numerical Mathematics, 1999, 31, 133-158.	1.2	87
38	Direct numerical simulation of turbulent channel flow with permeable walls. Journal of Fluid Mechanics, 2002, 450, 259-285.	1.4	86
39	Aerodynamic characteristics of flying fish in gliding flight. Journal of Experimental Biology, 2010, 213, 3269-3279.	0.8	84
40	Laminar flow past a sphere rotating in the streamwise direction. Journal of Fluid Mechanics, 2002, 461, 365-386.	1.4	83
41	Discretization errors in large eddy simulation: on the suitability of centered and upwind-biased compact difference schemes. Journal of Computational Physics, 2004, 198, 580-616.	1.9	80
42	Direct numerical simulation of heated vertical air flows in fully developed turbulent mixed convection. International Journal of Heat and Mass Transfer, 2003, 46, 1613-1627.	2.5	76
43	Scale interactions and spectral energy transfer in turbulent channel flow. Journal of Fluid Mechanics, 2018, 854, 474-504.	1.4	74
44	Skin-friction generation by attached eddies in turbulent channel flow. Journal of Fluid Mechanics, 2016, 808, 511-538.	1.4	72
45	Active control of flow over a sphere for drag reduction at a subcritical Reynolds number. Journal of Fluid Mechanics, 2004, 517, 113-129.	1.4	64
46	On the steady simple shear flows of the one-mode Giesekus fluid. Rheologica Acta, 1989, 28, 13-24.	1.1	63
47	Effect of spatial discretization schemes on numerical solutions of viscoelastic fluid flows. Journal of Non-Newtonian Fluid Mechanics, 2001, 100, 27-47.	1.0	63
48	Toward neural-network-based large eddy simulation: application to turbulent channel flow. Journal of Fluid Mechanics, 2021, 914, .	1.4	58
49	Mixing enhancement behind a backward-facing step using tabs. Physics of Fluids, 2007, 19, .	1.6	57
50	A discrete-forcing immersed boundary method for the fluidâ€“structure interaction of an elastic slender body. Journal of Computational Physics, 2015, 280, 529-546.	1.9	57
51	Flow characteristics in a volute-type centrifugal pump using large eddy simulation. International Journal of Heat and Fluid Flow, 2018, 72, 52-60.	1.1	57
52	Control of Flow-Induced Noise Behind a Circular Cylinder Using Splitter Plates. AIAA Journal, 1998, 36, 1961-1967.	1.5	52
53	Sectional lift coefficient of a flapping wing in hovering motion. Physics of Fluids, 2010, 22, .	1.6	51
54	Suboptimal feedback control of turbulent flow over a backward-facing step. Journal of Fluid Mechanics, 2002, 463, 201-227.	1.4	49

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55	Effects of large density variation on strongly heated internal air flows. Physics of Fluids, 2006, 18, 075102.	1.6	48
56	On the effect of riblets in fully developed laminar channel flows. Physics of Fluids A, Fluid Dynamics, 1991, 3, 1892-1896.	1.6	46
57	Flow around a helically twisted elliptic cylinder. Physics of Fluids, 2016, 28, .	1.6	46
58	Spaceâ€“time characteristics of the wall shear-stress fluctuations in a low-Reynolds-number channel flow. Physics of Fluids, 1999, 11, 3084-3094.	1.6	45
59	Stabilization of absolute instability in spanwise wavy two-dimensional wakes. Journal of Fluid Mechanics, 2013, 727, 346-378.	1.4	45
60	The Function of the Alula in Avian Flight. Scientific Reports, 2015, 5, 9914.	1.6	42
61	Large eddy simulations of turbulent channel and boundary layer flows at high Reynolds number with mean wall shear stress boundary condition. Physics of Fluids, 2013, 25, .	1.6	41
62	Inverse Magnus effect on a rotating sphere: when and why. Journal of Fluid Mechanics, 2014, 754, .	1.4	41
63	Laminar convective heat transfer of a Bingham plastic in a circular pipeâ€”II. Numerical approach hydrodynamically developing flow and simultaneously developing flow. International Journal of Heat and Mass Transfer, 1997, 40, 3689-3701.	2.5	40
64	Dynamic global model for large eddy simulation of transient flow. Physics of Fluids, 2010, 22, .	1.6	40
65	Predictions of the effective slip length and drag reduction with a lubricated micro-groove surface in a turbulent channel flow. Journal of Fluid Mechanics, 2019, 874, 797-820.	1.4	40
66	Control of absolute instability by basic-flow modification in a parallel wake at low Reynolds number. Journal of Fluid Mechanics, 2006, 560, 465.	1.4	39
67	Machine-learning-based feedback control for drag reduction in a turbulent channel flow. Journal of Fluid Mechanics, 2020, 904, .	1.4	38
68	Large Eddy Simulation of Flow and Heat Transfer in a Channel Roughened by Square or Semicircle Ribs. Journal of Turbomachinery, 2005, 127, 263-269.	0.9	36
69	Kinematic control of aerodynamic forces on an inclined flapping wing with asymmetric strokes. Bioinspiration and Biomimetics, 2012, 7, 016008.	1.5	36
70	Effects of the air layer of an idealized superhydrophobic surface on the slip length and skin-friction drag. Journal of Fluid Mechanics, 2016, 790, .	1.4	35
71	A weak-coupling immersed boundary method for fluidâ€“structure interaction with low density ratio of solid to fluid. Journal of Computational Physics, 2018, 359, 296-311.	1.9	35
72	Vortex pairing in an axisymmetric jet using two-frequency acoustic forcing at low to moderate strouhal numbers. Experiments in Fluids, 1998, 25, 305-315.	1.1	34

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73	Laminar convective heat transfer of a Bingham plastic in a circular pipeâ€"I. Analytical approachâ€"thermally fully developed flow and thermally developing flow (the Graetz problem) Tj ETQq1 1 0.784314 rgBT /Overlock	1.5	32
74	Dissimilarity between the velocity and temperature fields in a perturbed turbulent thermal boundary layer. Physics of Fluids, 2001, 13, 1466-1479.	1.6	32
75	Does the sailfish skin reduce the skin friction like the shark skin?. Physics of Fluids, 2008, 20, .	1.6	32
76	Spaceâ€"time characteristics of a compliant wall in a turbulent channel flow. Journal of Fluid Mechanics, 2014, 756, 30-53.	1.4	32
77	Effect of free-stream turbulence on the flow over a sphere. Physics of Fluids, 2010, 22, .	1.6	30
78	Unsteady Simulation of Jets in a Cross Flow. Journal of Computational Physics, 1997, 134, 342-356.	1.9	29
79	Aerodynamic Performance of a Gliding Swallowtail Butterfly Wing Model. Experimental Mechanics, 2010, 50, 1313-1321.	1.1	29
80	Mechanism of drag reduction by a surface trip wire on a sphere. Journal of Fluid Mechanics, 2011, 672, 411-427.	1.4	29
81	Active control of turbulent flow over a model vehicle for drag reduction. Journal of Turbulence, 2004, 5, .	0.5	27
82	Laminar flow past a hemisphere. Physics of Fluids, 2003, 15, 2457-2460.	1.6	26
83	A modified fractional step method of keeping a constant mass flow rate in fully developed channel and pipe flows. Journal of Mechanical Science and Technology, 2000, 14, 547-552.	0.4	25
84	Optimal Shape Design of a Two-Dimensional Asymmetric Diffuser in Turbulent Flow. AIAA Journal, 2004, 42, 1154-1169.	1.5	24
85	Hydrodynamic Characteristics of the Sailfish (Istiophorus platypterus) and Swordfish (Xiphias) Tj ETQq1 1 0.784314 rgBT /Overlock	1.1	24
86	Large eddy simulation of flow and heat transfer in a rotating ribbed channel. International Journal of Heat and Mass Transfer, 2007, 50, 4937-4947.	2.5	23
87	A bio-inspired device for drag reduction on a three-dimensional model vehicle. Bioinspiration and Biomimetics, 2016, 11, 026004.	1.5	22
88	Toward improved consistency ofa prioritests witha posterioritests in large eddy simulation. Physics of Fluids, 2005, 17, 015103.	1.6	21
89	Two-dimensional mechanism of hovering flight by single flapping wing. Journal of Mechanical Science and Technology, 2007, 21, 207-221.	0.7	20
90	A scaling law for the lift of hovering insects. Journal of Fluid Mechanics, 2015, 782, 479-490.	1.4	20

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91	On the modification of the near-wall coherent structure in a three-dimensional turbulent boundary layer on a free rotating disk. Physics of Fluids, 1998, 10, 2315-2322.	1.6	19
92	Control of streamwise vortices with uniform magnetic fluxes. Physics of Fluids, 1998, 10, 1997-2005.	1.6	19
93	Characteristics of laminar flow past a sphere in uniform shear. Physics of Fluids, 2005, 17, 103602.	1.6	19
94	Hydrodynamic role of longitudinal dorsal ridges in a leatherback turtle swimming. Scientific Reports, 2016, 6, 34283.	1.6	19
95	Vortical structures around a flexible oscillating panel for maximum thrust in a quiescent fluid. Journal of Fluids and Structures, 2016, 67, 241-260.	1.5	19
96	Iterative Feedback Tuning of the Proportional-Integral-Differential Control of Flow Over a Circular Cylinder. IEEE Transactions on Control Systems Technology, 2019, 27, 1385-1396.	3.2	18
97	A proportionalâ€“integralâ€“differential control of flow over a circular cylinder. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 1540-1555.	1.6	17
98	Flow-control approaches to drag reduction in aerodynamics: progress and prospects. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 1349-1351.	1.6	17
99	Flow structure modifications by leading-edge tubercles on a 3D wing. Bioinspiration and Biomimetics, 2018, 13, 066011.	1.5	16
100	Drag Reduction with a Sliding Wall in Flow over a Circular Cylinder. AIAA Journal, 2000, 38, 715-717.	1.5	15
101	Direct numerical simulation of a turbulent core-annular flow with water-lubricated high viscosity oil in a vertical pipe. Journal of Fluid Mechanics, 2018, 849, 419-447.	1.4	15
102	Experimental investigation of tip-leakage flow in an axial flow fan at various flow rates. Journal of Mechanical Science and Technology, 2019, 33, 1271-1278.	0.7	15
103	Effect of a casing fence on the tip-leakage flow of an axial flow fan. International Journal of Heat and Fluid Flow, 2019, 77, 157-170.	1.1	15
104	Control of laminar vortex shedding behind a circular cylinder using tabs. Journal of Mechanical Science and Technology, 2014, 28, 1721-1725.	0.7	14
105	Flight of a falling maple seed. Physical Review Fluids, 2017, 2, .	1.0	13
106	Resonance in Axisymmetric Jet Under Controlled Helical, Fundamental, and Axisymmetric Subharmonic Forcing. AIAA Journal, 2000, 38, 434-441.	1.5	12
107	Scaling law for the lift force of autorotating falling seeds at terminal velocity. Journal of Fluid Mechanics, 2018, 835, 406-420.	1.4	12
108	A numerical and theoretical study of the aerodynamic performance of a hovering rhinoceros beetle (Trypoxylus dichotomus). Journal of Fluid Mechanics, 2020, 885, .	1.4	12

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109	Illustration of Wing Deformation Effects in Three-Dimensional Flapping Flight. AIAA Journal, 2015, 53, 2607-2620.	1.5	11
110	Modification of flow behind a circular cylinder by steady and time-periodic blowing. Physics of Fluids, 2021, 33, .	1.6	11
111	Characteristics of the alula in relation to wing and body size in the Laridae and Sternidae. Animal Cells and Systems, 2017, 21, 63-69.	0.8	10
112	Linear proportionalâ€“integral control for skin-friction reduction in a turbulent channelÂflow. Journal of Fluid Mechanics, 2017, 814, 430-451.	1.4	9
113	Drag reduction on a three-dimensional model vehicle using a wire-to-plate DBD plasma actuator. Experiments in Fluids, 2020, 61, 1.	1.1	9
114	Control of Flow Around an Airfoil Using Piezoceramic Actuators. AIAA Journal, 2002, 40, 1008-1010.	1.5	8
115	Control of flow around a low Reynolds number airfoil using longitudinal strips. Physical Review Fluids, 2018, 3, .	1.0	8
116	Effect of a localized time-periodic wall motion on a turbulent boundary layer flow. Physics of Fluids, 2003, 15, 265-268.	1.6	7
117	Control of Flow Separation in a Turbulent Boundary Layer Using Time-Periodic Forcing. Journal of Fluids Engineering, Transactions of the ASME, 2016, 138, .	0.8	7
118	A zero-dimensional predictive model for the pressure drop in the stenotic coronary artery based on its geometric characteristics. Journal of Biomechanics, 2020, 113, 110076.	0.9	7
119	Control of flow-induced noise behind a circular cylinder using splitter plates. AIAA Journal, 1998, 36, 1961-1967.	1.5	7
120	Sensitivity of global instability of spatially developing flow in weakly and fully nonlinear regimes. Physics of Fluids, 2008, 20, 071703.	1.6	6
121	A dynamic global subgrid-scale model for large eddy simulation of scalar transport in complex turbulent flows. Journal of Mechanical Science and Technology, 2012, 26, 3803-3810.	0.7	6
122	Aerodynamics of a golf ball with grooves. Proceedings of the Institution of Mechanical Engineers, Part P: Journal of Sports Engineering and Technology, 2014, 228, 233-241.	0.4	6
123	Suboptimal feedback control of flow over a sphere. International Journal of Heat and Fluid Flow, 2010, 31, 208-216.	1.1	5
124	Flow structures around a butterfly-shaped low-aspect-ratio wing. Journal of Mechanical Science and Technology, 2014, 28, 2669-2675.	0.7	5
125	Flow over a ski jumper in flight: Prediction of the aerodynamic force and flight posture with higher lift-to-drag ratio. Journal of Biomechanics, 2019, 89, 78-84.	0.9	4
126	Effect of the spanwise computational domain size on the flow over a two-dimensional bluff body with spanwise periodic perturbations at low Reynolds number. Computers and Fluids, 2019, 183, 102-106.	1.3	4

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127	Effects of pannus formation on the flow around a bileaflet mechanical heart valve. PLoS ONE, 2020, 15, e0234341.	1.1	4
128	Combined effects of polymers and active blowing/suction on drag reduction. Journal of Non-Newtonian Fluid Mechanics, 2005, 131, 53-58.	1.0	3
129	Effect of local forcing on backward-facing step flow with laminar separation. Journal of Turbulence, 2007, 8, N6.	0.5	3
130	Optimal disturbances in the near-wall region of turbulent channel flows. Physical Review Fluids, 2016, 1, .	1.0	3
131	A predictive model of the drag coefficient of a circular cylinder. Physics of Fluids, 2021, 33, .	1.6	3
132	Boundary treatment for the unsteady surface velocity in an immersed boundary method. Journal of Mechanical Science and Technology, 2009, 23, 2502-2506.	0.7	2
133	Sectional lift coefficient of a rotating wing at low Reynolds numbers. Journal of Mechanical Science and Technology, 2015, 29, 4775-4781.	0.7	2
134	Prediction of Sound from Flow over Circular Cylinder Using Modified Green Function. AIAA Journal, 2004, 42, 2612-2615.	1.5	1
135	A predictive model of the drag coefficient for a revolving wing at low Reynolds number. Bioinspiration and Biomimetics, 2018, 13, 054001.	1.5	1
136	Fluid-Structure Interactions of Large Amplitude Vibrations. Lecture Notes in Mechanical Engineering, 2019, , 191-198.	0.3	1
137	Effect of body angle on the aerodynamics of a rhinoceros beetle: Smoke-wire visualization in a wind tunnel. Journal of Mechanical Science and Technology, 2020, 34, 209-218.	0.7	1
138	Direct numerical simulation of jets in a cross turbulent boundary layer flow. , 0, , .		0
139	Distributed Forcing for Flow over a Bluff Body. , 2004, , .		0
140	Sound Characteristics from Turbulent Flow over a Sphere. , 2004, , .		0
141	Preface to Special Topic: Turbulence Physics and Controlâ€"Papers from a Workshop in Honor of John Kim's 60th Birthday, Stanford, California, September 2007. Physics of Fluids, 2008, 20, 101501.	1.6	0
142	A Discrete-Forcing Immersed Boundary Method for the Fluid-Structure Interaction of an Elastic Slender Body. , 2011, , .		0
143	A PID Control of Flow Over a Circular Cylinder. , 2011, , .		0
144	Large Eddy Simulation of a Free Circular Jet up to Re=100,000(Numerical Simulation). The Proceedings of the International Conference on Jets Wakes and Separated Flows (ICJWSF), 2005, 2005, 721-724.	0.1	0