

Iman Borazjani

List of Publications by Year in descending order

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Version: 2024-02-01

81
papers

3,467
citations

185998

28
h-index

138251

58
g-index

86
all docs

86
docs citations

86
times ranked

2205
citing authors

#	ARTICLE	IF	CITATIONS
1	Curvilinear immersed boundary method for simulating fluid structure interaction with complex 3D rigid bodies. <i>Journal of Computational Physics</i> , 2008, 227, 7587-7620.	1.9	368
2	Numerical investigation of the hydrodynamics of carangiform swimming in the transitional and inertial flow regimes. <i>Journal of Experimental Biology</i> , 2008, 211, 1541-1558.	0.8	351
3	Vortex-induced vibrations of two cylinders in tandem arrangement in the proximity wake interference region. <i>Journal of Fluid Mechanics</i> , 2009, 621, 321-364.	1.4	243
4	On the role of form and kinematics on the hydrodynamics of self-propelled body/caudal fin swimming. <i>Journal of Experimental Biology</i> , 2010, 213, 89-107.	0.8	209
5	Numerical investigation of the hydrodynamics of anguilliform swimming in the transitional and inertial flow regimes. <i>Journal of Experimental Biology</i> , 2009, 212, 576-592.	0.8	201
6	Fluid-structure interaction, immersed boundary-finite element method simulations of bio-prosthetic heart valves. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2013, 257, 103-116.	3.4	137
7	Numerical simulation of 3D flow past a real-life marine hydrokinetic turbine. <i>Advances in Water Resources</i> , 2012, 39, 33-43.	1.7	120
8	The fish tail motion forms an attached leading edge vortex. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2013, 280, 20122071.	1.2	111
9	Curvilinear immersed boundary method for simulating coupled flow and bed morphodynamic interactions due to sediment transport phenomena. <i>Advances in Water Resources</i> , 2011, 34, 829-843.	1.7	106
10	The hydrodynamic advantages of synchronized swimming in a rectangular pattern. <i>Bioinspiration and Biomimetics</i> , 2015, 10, 056018.	1.5	102
11	Hydrodynamics of swimming in stingrays: numerical simulations and the role of the leading-edge vortex. <i>Journal of Fluid Mechanics</i> , 2016, 788, 407-443.	1.4	99
12	A review of state-of-the-art numerical methods for simulating flow through mechanical heart valves. <i>Medical and Biological Engineering and Computing</i> , 2009, 47, 245-256.	1.6	98
13	Hydrodynamics of the bluegill sunfish C-start escape response: three-dimensional simulations and comparison with experimental data. <i>Journal of Experimental Biology</i> , 2012, 215, 671-684.	0.8	97
14	High-Resolution Fluid-Structure Interaction Simulations of Flow Through a Bi-Leaflet Mechanical Heart Valve in an Anatomic Aorta. <i>Annals of Biomedical Engineering</i> , 2010, 38, 326-344.	1.3	92
15	Disentangling the Functional Roles of Morphology and Motion in the Swimming of Fish. <i>Integrative and Comparative Biology</i> , 2010, 50, 1140-1154.	0.9	92
16	Interactive Slice WIM: Navigating and Interrogating Volume Data Sets Using a Multisurface, Multitouch VR Interface. <i>IEEE Transactions on Visualization and Computer Graphics</i> , 2012, 18, 1614-1626.	2.9	71
17	Platelet activation of mechanical versus bioprosthetic heart valves during systole. <i>Journal of Biomechanics</i> , 2017, 56, 111-116.	0.9	59
18	A parallel overset-curvilinear-immersed boundary framework for simulating complex 3D incompressible flows. <i>Computers and Fluids</i> , 2013, 77, 76-96.	1.3	54

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19	The Effect of Implantation Orientation of a Bileaflet Mechanical Heart Valve on Kinematics and Hemodynamics in an Anatomic Aorta. <i>Journal of Biomechanical Engineering</i> , 2010, 132, 111005.	0.6	47
20	Pulsatile Flow Effects on the Hemodynamics of Intracranial Aneurysms. <i>Journal of Biomechanical Engineering</i> , 2010, 132, 111009.	0.6	45
21	Vortex-induced vibrations of an elastically mounted sphere with three degrees of freedom at $Re = 300$: hysteresis and vortex shedding modes. <i>Journal of Fluid Mechanics</i> , 2011, 686, 426-450.	1.4	45
22	The functional role of caudal and anal/dorsal fins during the C-start of a bluegill sunfish. <i>Journal of Experimental Biology</i> , 2013, 216, 1658-69.	0.8	44
23	Simulation of the Three-Dimensional Hinge Flow Fields of a Bileaflet Mechanical Heart Valve Under Aortic Conditions. <i>Annals of Biomedical Engineering</i> , 2010, 38, 841-853.	1.3	42
24	On the structure of vortex rings from inclined nozzles. <i>Journal of Fluid Mechanics</i> , 2011, 686, 451-483.	1.4	41
25	A Newton-Krylov method with an approximate analytical Jacobian for implicit solution of Navier-Stokes equations on staggered overset-curvilinear grids with immersed boundaries. <i>Journal of Computational Physics</i> , 2017, 331, 227-256.	1.9	40
26	Comparison of platelet activation through hinge vs bulk flow in bileaflet mechanical heart valves. <i>Journal of Biomechanics</i> , 2019, 83, 280-290.	0.9	37
27	Slice WIM. , 2011, , .		33
28	Effects of Reynolds and Womersley Numbers on the Hemodynamics of Intracranial Aneurysms. <i>Computational and Mathematical Methods in Medicine</i> , 2016, 2016, 1-16.	0.7	30
29	On the role of copepod antennae in the production of hydrodynamic force during hopping. <i>Journal of Experimental Biology</i> , 2010, 213, 3019-3035.	0.8	29
30	Reducing flow separation of an inclined plate via travelling waves. <i>Journal of Fluid Mechanics</i> , 2019, 880, 831-863.	1.4	28
31	On the scaling of propagation of periodically generated vortex rings. <i>Journal of Fluid Mechanics</i> , 2018, 853, 150-170.	1.4	27
32	A non-dimensional parameter for classification of the flow in intracranial aneurysms. II. Patient-specific geometries. <i>Physics of Fluids</i> , 2019, 31, 031905.	1.6	27
33	A Review of Fluid-Structure Interaction Simulations of Prosthetic Heart Valves. <i>Journal of Long-Term Effects of Medical Implants</i> , 2015, 25, 75-93.	0.2	24
34	Left Ventricular Flow Analysis: Recent Advances in Numerical Methods and Applications in Cardiac Ultrasound. <i>Computational and Mathematical Methods in Medicine</i> , 2013, 2013, 1-11.	0.7	23
35	The effects of irregular shape on the particle stress of dilute suspensions. <i>Journal of Fluid Mechanics</i> , 2018, 839, 663-692.	1.4	23
36	The influence of inertia on the rheology of a periodic suspension of neutrally buoyant rigid ellipsoids. <i>Journal of Fluid Mechanics</i> , 2015, 781, 506-549.	1.4	21

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37	A non-dimensional parameter for classification of the flow in intracranial aneurysms. I. Simplified geometries. <i>Physics of Fluids</i> , 2019, 31, 031904.	1.6	21
38	Large eddy simulations of a turbulent channel flow with a deforming wall undergoing high steepness traveling waves. <i>Physics of Fluids</i> , 2019, 31, .	1.6	20
39	Controlling Flow Separation on a Thick Airfoil Using Backward Traveling Waves. <i>AIAA Journal</i> , 2020, 58, 3799-3807.	1.5	20
40	Automatic segmentation of the left ventricle in echocardiographic images using convolutional neural networks. <i>Quantitative Imaging in Medicine and Surgery</i> , 2021, 11, 1763-1781.	1.1	20
41	Simulations of Unsteady Aquatic Locomotion: From Unsteadiness in Straight-Line Swimming to Fast-Starts. <i>Integrative and Comparative Biology</i> , 2015, 55, 740-752.	0.9	17
42	Self-propelled swimming simulations of bio-inspired smart structures. <i>Bioinspiration and Biomimetics</i> , 2016, 11, 056001.	1.5	17
43	Fluid-structure coupled biotransport processes in aortic valve disease. <i>Journal of Biomechanics</i> , 2021, 117, 110239.	0.9	16
44	The Ground Effect in Anguilliform Swimming. <i>Biomimetics</i> , 2020, 5, 9.	1.5	13
45	The Role of Shape and Heart Rate on the Performance of the Left Ventricle. <i>Journal of Biomechanical Engineering</i> , 2015, 137, 114501.	0.6	10
46	A hybrid <scp>echocardiography&€CFD</scp> framework for ventricular flow simulations. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2020, 36, e03352.	1.0	9
47	A parallel dynamic overset grid framework for immersed boundary methods. <i>Computers and Fluids</i> , 2022, 239, 105378.	1.3	9
48	A numerical study on controlling flow separation via surface morphing in the form of backward traveling waves. , 2019, , .		8
49	A Simple Flow Classification Parameter Can Discriminate Rupture Status in Intracranial Aneurysms. <i>Neurosurgery</i> , 2020, 87, E557-E564.	0.6	8
50	Large Eddy Simulations of Flows with Moving Boundaries. <i>Heat and Mass Transfer</i> , 2020, , 201-225.	0.2	8
51	A Process for Design, Verification, Validation, and Manufacture of Medical Devices Using Immersive VR Environments. <i>Journal of Medical Devices, Transactions of the ASME</i> , 2010, 4, .	0.4	7
52	Supporting internal visualization of biomedical datasets via 3D rapid prototypes and sketch-based gestures. , 2011, , .		4
53	The Role of Amplitude on Controlling Flow Separation Using Traveling Wave Morphing. , 2021, , .		4
54	A Computational Fluid Dynamic (CFD) Tool for Optimization and Guided Implantation of Biomedical Devices. <i>Journal of Medical Devices, Transactions of the ASME</i> , 2009, 3, .	0.4	3

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55	Numerical Simulations of Flow around Copepods: Challenges and Future Directions. <i>Fluids</i> , 2020, 5, 52.	0.8	3
56	A kinematics-based model for the settling of gravity-driven arbitrary-shaped particles on a surface. <i>PLoS ONE</i> , 2021, 16, e0243716.	1.1	3
57	Fluid-Structure Interaction in Bi-Leaflet Mechanical Heart Valves. , 2007, , 17.		2
58	3D Reconstruction of the Left Ventricle From Four Echocardiographic Projections. , 2014, , .		2
59	Automated Three-Dimensional Reconstruction of the Left Ventricle From Multiple-Axis Echocardiography. <i>Journal of Biomechanical Engineering</i> , 2016, 138, .	0.6	2
60	Video: Stall Delay of a NACA0018 Airfoil by Traveling Wave Actuations. , 0, , .		2
61	FLOW CONTROL with TRAVELING-WAVE SURFACE MORPHING at POST-STALL ANGLES of ATTACK. , 2022, , .		2
62	Computational Techniques for Biological Fluids: From Blood Vessel Scale to Blood Cells. , 2010, , 105-155.		1
63	Self-Assembling Swimming Smart Boxes. , 2014, , .		1
64	An Immersed Boundary Method for Calculating the Relative Viscosity of a Suspension of Rigid Particles. , 2014, , .		1
65	Parallel Implementation of Periodic Boundary Conditions for a Curvilinear Immersed Boundary Method. , 2014, , .		1
66	The effect of undulations on the particle stress in dilute suspensions of rod-like particles. <i>European Journal of Computational Mechanics</i> , 2017, 26, 61-77.	0.6	1
67	A compressible LES with immersed boundary method. , 2021, , .		1
68	Sharp-Interface Immersed-Boundary Method for Compressible Flows with Shock-Particle Interaction. <i>AIAA Journal</i> , 2021, 59, 1169-1183.	1.5	1
69	The Effects of Implantation Orientation of a Bileaflet Mechanical Heart Valve in an Anatomic Left Ventricle-Aorta Configuration. <i>Journal of Biomechanical Engineering</i> , 2022, 144, .	0.6	1
70	Visualizing the wake of aquatic swimmers. , 2011, , .		0
71	Vortex Generation in Two Intracranial Aneurysms. , 2014, , .		0
72	3D Flow Simulations in a Simplified Right Ventricle Model. , 2014, , .		0

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73	NREL Phase VI Wind Turbine Modeling Using an Unsteady Panel Method. , 2014, , .		0
74	Self-Propelled Swimming Simulations of Self-Assembling Smart Boxes. , 2014, , .		0
75	Aerodynamic Design of Flat Delta Kite Based on Polhamus Concept of Leading Edge Suction Analogy. , 2014, , .		0
76	Generation and Optimization of Traveling Vibrating Waves in Self-Assembling Swimming Smart Boxes. , 2015, , .		0
77	Hydrodynamics of aquatic swimming: inspiration for flow control. , 2021, , .		0
78	Simulations of the Hinge Flow Fields of a Bileaflet Mechanical Heart Valve Under Physiologic Pulsatile Aortic Conditions. , 2008, , .		0
79	Video: Leading edge vortex formation in aquatic swimming. , 0, , .		0
80	10.1063/1.5131268.1. , 2019, , .		0
81	Large eddy Simulation of turbulent compressible wavy channels. , 2022, , .		0