Silas Alben

List of Publications by Year
in descending order

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61 papers	2,675 citations	304368 22 h-index	182168 51 g-index
63 all docs	63 docs citations	63 times ranked	2221 citing authors

#	Article	IF	Citations
1	Dynamics of flags over wide ranges of mass and bending stiffness. Physical Review Fluids, 2022, 7, .	1.0	5
2	Inverse design of self-oscillatory gels through deep learning. Neural Computing and Applications, 2022, 34, 6879.	3.2	0
3	Packing of elastic rings with friction. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2022, 478, .	1.0	5
4	Collective locomotion of two-dimensional lattices of flapping plates. Part 2. Lattice flows and propulsive efficiency. Journal of Fluid Mechanics, 2021, 915, .	1.4	6
5	Collective locomotion of two-dimensional lattices of flapping plates. Part 1. Numerical method, single-plate case and lattice input power. Journal of Fluid Mechanics, 2021, 915, .	1.4	4
6	Efficient sliding locomotion of three-link bodies. Physical Review E, 2021, 103, 042414.	0.8	6
7	Eigenmode analysis of membrane stability in inviscid flow. Physical Review Fluids, 2021, 6, .	1.0	10
8	Dynamics of tethered membranes in inviscid flow. Journal of Fluids and Structures, 2021, 107, 103384.	1.5	5
9	Intermittent sliding locomotion of a two-link body. Physical Review E, 2020, 101, 052613.	0.8	3
10	Large-amplitude membrane flutter in inviscid flow. Journal of Fluid Mechanics, 2020, 891, .	1.4	18
11	Efficient sliding locomotion with isotropic friction. Physical Review E, 2019, 99, 062402.	0.8	10
12	Semi-implicit methods for the dynamics of elastic sheets. Journal of Computational Physics, 2019, 399, 108952.	1.9	6
13	Dynamics and locomotion of flexible foils in a frictional environment. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2018, 474, 20170503.	1.0	8
14	Optimal convection cooling flows in general 2DÂgeometries. Journal of Fluid Mechanics, 2017, 814, 484-509.	1.4	5
15	Intracellular localization of nanoparticle dimers by chirality reversal. Nature Communications, 2017, 8, 1847.	5.8	93
16	Improved convection cooling in steady channel flows. Physical Review Fluids, 2017, 2, .	1.0	7
17	Stability and scalability of piezoelectric flags. Physics of Fluids, 2016, 28, .	1.6	23
18	Fluidâ€“structure interactions with applications to biology. Acta Mechanica Sinica/Lixue Xuebao, 2016, 32, 977-979.	1.5	10

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19	The dynamics of vortex streets in channels. Physics of Fluids, 2015, 27, .	1.6	11
20	Flag flutter in inviscid channel flow. Physics of Fluids, 2015, 27, .	1.6	39
21	Bending of bilayers with general initial shapes. Advances in Computational Mathematics, 2015, 41, 1-22.	0.8	7
22	Optimizing snake locomotion on an inclined plane. Physical Review E, 2014, 89, 012717.	0.8	11
23	Functional morphology of the fin rays of teleost fishes. Journal of Morphology, 2013, 274, 1044-1059.	0.6	49
24	Efficient kinematics for jet-propelled swimming. Journal of Fluid Mechanics, 2013, 733, 100-133.	1.4	42
25	Optimization of two- and three-link snakelike locomotion. Physical Review E, 2013, 87, 022711.	0.8	20
26	Optimizing snake locomotion in the plane. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20130236.	1.0	20
27	Interfacing Mathematics and Biology: A Discussion on Training, Research, Collaboration, and Funding. Integrative and Comparative Biology, 2012, 52, 616-621.	0.9	7
28	Effects of shape and stroke parameters on the propulsion performance of an axisymmetric swimmer. Bioinspiration and Biomimetics, 2012, 7, 016012.	1.5	22
29	Flapping propulsion using a fin ray. Journal of Fluid Mechanics, 2012, 705, 149-164.	1.4	11
30	Using Computational and Mechanical Models to Study Animal Locomotion. Integrative and Comparative Biology, 2012, 52, 553-575.	0.9	42
31	Passive Robotic Models of Propulsion by the Bodies and Caudal Fins of Fish. Integrative and Comparative Biology, 2012, 52, 576-587.	0.9	81
32	Dynamics of freely swimming flexible foils. Physics of Fluids, 2012, 24, .	1.6	162
33	The attraction between a flexible filament and a point vortex. Journal of Fluid Mechanics, 2012, 697, 481-503.	1.4	12
34	Model Problems for Fish Schooling. The IMA Volumes in Mathematics and Its Applications, 2012, , 3-13.	0.5	4
35	Edge Effects Determine the Direction of Bilayer Bending. Nano Letters, 2011, 11, 2280-2285.	4.5	127
36	Interactions between vortices and flexible walls. International Journal of Non-Linear Mechanics, 2011, 46, 586-591.	1.4	7

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37	Regularizing a vortex sheet near a separation point. Journal of Computational Physics, 2010, 229, 5280-5298.	1.9	13
38	Optimizing a fin ray for stiffness. Journal of the Mechanics and Physics of Solids, 2010, 58, 656-664.	2.3	3
39	Coordination of multiple appendages in drag-based swimming. Journal of the Royal Society Interface, 2010, 7, 1545-1557.	1.5	43
40	Inviscid simulations of interacting flags. Chaos, 2010, 20, 041104.	1.0	0
41	Flexible sheets falling in an inviscid fluid. Physics of Fluids, 2010, 22, .	1.6	12
42	Self-similar bending in a flow: The axisymmetric case. Physics of Fluids, 2010, 22, 081901.	1.6	3
43	Passive and active bodies in vortex-street wakes. Journal of Fluid Mechanics, 2010, 642, 95-125.	1.4	34
44	Foldable structures and the natural design of pollen grains. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 7635-7639.	3.3	239
45	Collapse and folding of pressurized rings in two dimensions. Physical Review E, 2009, 79, 056604.	0.8	14
46	Simulating the dynamics of flexible bodies and vortex sheets. Journal of Computational Physics, 2009, 228, 2587-2603.	1.9	87
47	On the swimming of a flexible body in a vortex street. Journal of Fluid Mechanics, 2009, 635, 27-45.	1.4	25
48	Wake-mediated synchronization and drafting in coupled flags. Journal of Fluid Mechanics, 2009, 641, 489-496.	1.4	94
49	An implicit method for coupled flowâ€“body dynamics. Journal of Computational Physics, 2008, 227, 4912-4933.	1.9	15
50	Flapping States of a Flag in an Inviscid Fluid: Bistability and the Transition to Chaos. Physical Review Letters, 2008, 100, 074301.	2.9	213
51	Packings of a charged line on a sphere. Physical Review E, 2008, 78, 066603.	0.8	3
52	The flapping-flag instability as a nonlinear eigenvalue problem. Physics of Fluids, 2008, 20, .	1.6	41
53	van Nierop, Alben, and Brenner Reply:. Physical Review Letters, 2008, 101, .	2.9	0
54	How Bumps on Whale Flippers Delay Stall: An Aerodynamic Model. Physical Review Letters, 2008, 100, 054502.	2.9	167

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55	Optimal flexibility of a flapping appendage in an inviscid fluid. Journal of Fluid Mechanics, 2008, 614, 355-380.	1.4	150
56	A cascade of length scales in elastic rings under confinement. Chaos, 2008, 18, 041109.	1.0	1
57	Self-assembly of flat sheets into closed surfaces. Physical Review E, 2007, 75, 056113.	0.8	11
58	The mechanics of active fin-shape control in ray-finned fishes. Journal of the Royal Society Interface, 2007, 4, 243-256.	1.5	129
59	Coherent locomotion as an attracting state for a free flapping body. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 11163-11166.	3.3	143
60	How flexibility induces streamlining in a two-dimensional flow. Physics of Fluids, 2004, 16, 1694-1713.	1.6	100
61	Drag reduction through self-similar bending of a flexible body. Nature, 2002, 420, 479-481.	13.7	225