Silas Alben

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/6233611/publications.pdf

Version: 2024-02-01

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	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
2	Drag reduction through self-similar bending of a flexible body. Nature, 2002, 420, 479-481.	13.7	225
3	Flapping States of a Flag in an Inviscid Fluid: Bistability and the Transition to Chaos. Physical Review Letters, 2008, 100, 074301.	2.9	213
4	How Bumps on Whale Flippers Delay Stall: An Aerodynamic Model. Physical Review Letters, 2008, 100, 054502.	2.9	167
5	Dynamics of freely swimming flexible foils. Physics of Fluids, 2012, 24, .	1.6	162
6	Optimal flexibility of a flapping appendage in an inviscid fluid. Journal of Fluid Mechanics, 2008, 614, 355-380.	1.4	150
7	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
8	The mechanics of active fin-shape control in ray-finned fishes. Journal of the Royal Society Interface, 2007, 4, 243-256.	1.5	129
9	Edge Effects Determine the Direction of Bilayer Bending. Nano Letters, 2011, 11, 2280-2285.	4.5	127
10	How flexibility induces streamlining in a two-dimensional flow. Physics of Fluids, 2004, 16, 1694-1713.	1.6	100
11	Wake-mediated synchronization and drafting in coupled flags. Journal of Fluid Mechanics, 2009, 641, 489-496.	1.4	94
12	Intracellular localization of nanoparticle dimers by chirality reversal. Nature Communications, 2017, 8, 1847.	5.8	93
13	Simulating the dynamics of flexible bodies and vortex sheets. Journal of Computational Physics, 2009, 228, 2587-2603.	1.9	87
14	Passive Robotic Models of Propulsion by the Bodies and Caudal Fins of Fish. Integrative and Comparative Biology, 2012, 52, 576-587.	0.9	81
15	Functional morphology of the fin rays of teleost fishes. Journal of Morphology, 2013, 274, 1044-1059.	0.6	49
16	Coordination of multiple appendages in drag-based swimming. Journal of the Royal Society Interface, 2010, 7, 1545-1557.	1.5	43
17	Using Computational and Mechanical Models to Study Animal Locomotion. Integrative and Comparative Biology, 2012, 52, 553-575.	0.9	42
18	Efficient kinematics for jet-propelled swimming. Journal of Fluid Mechanics, 2013, 733, 100-133.	1.4	42

#	Article	IF	Citations
19	The flapping-flag instability as a nonlinear eigenvalue problem. Physics of Fluids, 2008, 20, .	1.6	41
20	Flag flutter in inviscid channel flow. Physics of Fluids, 2015, 27, .	1.6	39
21	Passive and active bodies in vortex-street wakes. Journal of Fluid Mechanics, 2010, 642, 95-125.	1.4	34
22	On the swimming of a flexible body in a vortex street. Journal of Fluid Mechanics, 2009, 635, 27-45.	1.4	25
23	Stability and scalability of piezoelectric flags. Physics of Fluids, 2016, 28, .	1.6	23
24	Effects of shape and stroke parameters on the propulsion performance of an axisymmetric swimmer. Bioinspiration and Biomimetics, 2012, 7, 016012.	1.5	22
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	Large-amplitude membrane flutter in inviscid flow. Journal of Fluid Mechanics, 2020, 891, .	1.4	18
28	An implicit method for coupled flowâ€“body dynamics. Journal of Computational Physics, 2008, 227, 4912-4933.	1.9	15
29	Collapse and folding of pressurized rings in two dimensions. Physical Review E, 2009, 79, 056604.	0.8	14
30	Regularizing a vortex sheet near a separation point. Journal of Computational Physics, 2010, 229, 5280-5298.	1.9	13
31	Flexible sheets falling in an inviscid fluid. Physics of Fluids, 2010, 22, .	1.6	12
32	The attraction between a flexible filament and a point vortex. Journal of Fluid Mechanics, 2012, 697, 481-503.	1.4	12
33	Self-assembly of flat sheets into closed surfaces. Physical Review E, 2007, 75, 056113.	0.8	11
34	Flapping propulsion using a fin ray. Journal of Fluid Mechanics, 2012, 705, 149-164.	1.4	11
35	Optimizing snake locomotion on an inclined plane. Physical Review E, 2014, 89, 012717.	0.8	11
36	The dynamics of vortex streets in channels. Physics of Fluids, 2015, 27, .	1.6	11

#	Article	IF	Citations
37	Fluidâ€“structure interactions with applications to biology. Acta Mechanica Sinica/Lixue Xuebao, 2016, 32, 977-979.	1.5	10
38	Efficient sliding locomotion with isotropic friction. Physical Review E, 2019, 99, 062402.	0.8	10
39	Eigenmode analysis of membrane stability in inviscid flow. Physical Review Fluids, 2021, 6, .	1.0	10
40	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
41	Interactions between vortices and flexible walls. International Journal of Non-Linear Mechanics, 2011, 46, 586-591.	1.4	7
42	Interfacing Mathematics and Biology: A Discussion on Training, Research, Collaboration, and Funding. Integrative and Comparative Biology, 2012, 52, 616-621.	0.9	7
43	Bending of bilayers with general initial shapes. Advances in Computational Mathematics, 2015, 41, 1-22.	0.8	7
44	Improved convection cooling in steady channel flows. Physical Review Fluids, 2017, 2, .	1.0	7
45	Semi-implicit methods for the dynamics of elastic sheets. Journal of Computational Physics, 2019, 399, 108952.	1.9	6
46	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
47	Efficient sliding locomotion of three-link bodies. Physical Review E, 2021, 103, 042414.	0.8	6
48	Optimal convection cooling flows in general 2DÂgeometries. Journal of Fluid Mechanics, 2017, 814, 484-509.	1.4	5
49	Dynamics of tethered membranes in inviscid flow. Journal of Fluids and Structures, 2021, 107, 103384.	1.5	5
50	Dynamics of flags over wide ranges of mass and bending stiffness. Physical Review Fluids, 2022, 7, .	1.0	5
51	Packing of elastic rings with friction. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2022, 478, .	1.0	5
52	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
53	Model Problems for Fish Schooling. The IMA Volumes in Mathematics and Its Applications, 2012, , 3-13.	0.5	4
54	Packings of a charged line on a sphere. Physical Review E, 2008, 78, 066603.	0.8	3

#	Article	IF	Citations
55	Optimizing a fin ray for stiffness. Journal of the Mechanics and Physics of Solids, 2010, 58, 656-664.	2.3	3
56	Self-similar bending in a flow: The axisymmetric case. Physics of Fluids, 2010, 22, 081901.	1.6	3
57	Intermittent sliding locomotion of a two-link body. Physical Review E, 2020, 101, 052613.	0.8	3
58	A cascade of length scales in elastic rings under confinement. Chaos, 2008, 18, 041109.	1.0	1
59	van Nierop, Alben, and Brenner Reply:. Physical Review Letters, 2008, 101, .	2.9	0
60	Inviscid simulations of interacting flags. Chaos, 2010, 20, 041104.	1.0	0
61	Inverse design of self-oscillatory gels through deep learning. Neural Computing and Applications, 2022, 34, 6879.	3.2	0