

David Saintillan

List of Publications by Year in descending order

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60
papers

3,512
citations

172386

29
h-index

138417

58
g-index

66
all docs

66
docs citations

66
times ranked

2220
citing authors

#	ARTICLE	IF	CITATIONS
1	Instabilities and Pattern Formation in Active Particle Suspensions: Kinetic Theory and Continuum Simulations. <i>Physical Review Letters</i> , 2008, 100, 178103.	2.9	366
2	Orientational Order and Instabilities in Suspensions of Self-Locomoting Rods. <i>Physical Review Letters</i> , 2007, 99, 058102.	2.9	277
3	Instabilities, pattern formation, and mixing in active suspensions. <i>Physics of Fluids</i> , 2008, 20, .	1.6	270
4	Active suspensions and their nonlinear models. <i>Comptes Rendus Physique</i> , 2013, 14, 497-517.	0.3	206
5	Emergent vortices in populations of colloidal rollers. <i>Nature Communications</i> , 2015, 6, 7470.	5.8	205
6	Rheology of Active Fluids. <i>Annual Review of Fluid Mechanics</i> , 2018, 50, 563-592.	10.8	203
7	A smooth particle-mesh Ewald algorithm for Stokes suspension simulations: The sedimentation of fibers. <i>Physics of Fluids</i> , 2005, 17, 033301.	1.6	138
8	Emergence of coherent structures and large-scale flows in motile suspensions. <i>Journal of the Royal Society Interface</i> , 2012, 9, 571-585.	1.5	138
9	Bubble-Propelled Micromotors for Enhanced Transport of Passive Tracers. <i>Langmuir</i> , 2014, 30, 5082-5087.	1.6	136
10	Hydrodynamic interactions in the induced-charge electrophoresis of colloidal rod dispersions. <i>Journal of Fluid Mechanics</i> , 2006, 563, 223.	1.4	106
11	Transport of a dilute active suspension in pressure-driven channel flow. <i>Journal of Fluid Mechanics</i> , 2015, 777, 482-522.	1.4	89
12	Extensile motor activity drives coherent motions in a model of interphase chromatin. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 11442-11447.	3.3	83
13	Instabilities and nonlinear dynamics of concentrated active suspensions. <i>Physics of Fluids</i> , 2013, 25, .	1.6	77
14	A nonlinear small-deformation theory for transient droplet electrohydrodynamics. <i>Journal of Fluid Mechanics</i> , 2017, 810, 225-253.	1.4	67
15	On the distribution and swim pressure of run-and-tumble particles in confinement. <i>Journal of Fluid Mechanics</i> , 2015, 781, .	1.4	66
16	Extensional rheology of active suspensions. <i>Physical Review E</i> , 2010, 81, 056307.	0.8	65
17	Geometric control of active collective motion. <i>Soft Matter</i> , 2017, 13, 363-375.	1.2	64
18	Morphological transitions of elastic filaments in shear flow. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 9438-9443.	3.3	63

#	ARTICLE	IF	CITATIONS
19	The sedimentation of flexible filaments. <i>Journal of Fluid Mechanics</i> , 2013, 735, 705-736.	1.4	57
20	Electrohydrodynamics of viscous drops in strong electric fields: numerical simulations. <i>Journal of Fluid Mechanics</i> , 2017, 829, 127-152.	1.4	53
21	Electrohydrodynamic interaction of spherical particles under Quincke rotation. <i>Physical Review E</i> , 2013, 87, 043014.	0.8	50
22	Effect of flexibility on the shear-induced migration of short-chain polymers in parabolic channel flow. <i>Journal of Fluid Mechanics</i> , 2006, 557, 297.	1.4	49
23	Spontaneous oscillations, beating patterns, and hydrodynamics of active microfilaments. <i>Physical Review Fluids</i> , 2019, 4, .	1.0	49
24	Transport and dispersion of active particles in periodic porous media. <i>Physical Review Fluids</i> , 2019, 4, .	1.0	48
25	The growth of concentration fluctuations in dilute dispersions of orientable and deformable particles under sedimentation. <i>Journal of Fluid Mechanics</i> , 2006, 553, 347.	1.4	44
26	Theory of Active Suspensions. <i>Biological and Medical Physics Series</i> , 2015, , 319-355.	0.3	41
27	Flexible filaments buckle into helicoidal shapes in strong compressional flows. <i>Nature Physics</i> , 2020, 16, 689-694.	6.5	41
28	Vapor-Driven Propulsion of Catalytic Micromotors. <i>Scientific Reports</i> , 2015, 5, 13226.	1.6	40
29	Subdiffusive transport of fluctuating elastic filaments in cellular flows. <i>Physics of Fluids</i> , 2013, 25, .	1.6	30
30	Diplophoresis in large-scale suspensions of ideally polarizable spheres. <i>Journal of Fluid Mechanics</i> , 2010, 662, 66-90.	1.4	26
31	Globally aligned states and hydrodynamic traffic jams in confined suspensions of active asymmetric particles. <i>Physical Review E</i> , 2014, 89, 021002.	0.8	26
32	Buckling transition of a semiflexible filament in extensional flow. <i>Physical Review E</i> , 2015, 92, 041002.	0.8	26
33	Motion-based threat detection using microrods: experiments and numerical simulations. <i>Nanoscale</i> , 2015, 7, 7833-7840.	2.8	26
34	Hydrodynamic Synchronization of Spontaneously Beating Filaments. <i>Physical Review Letters</i> , 2019, 123, 208101.	2.9	26
35	Chaotic dynamics and oxygen transport in thin films of aerotactic bacteria. <i>Physics of Fluids</i> , 2012, 24, .	1.6	21
36	Computational mean-field modeling of confined active fluids. <i>Journal of Computational Physics</i> , 2019, 397, 108841.	1.9	20

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37	Sharp numerical simulation of incompressible two-phase flows. <i>Journal of Computational Physics</i> , 2019, 391, 91-118.	1.9	20
38	Revisiting the emergence of order in active matter. <i>Soft Matter</i> , 2021, 17, 3113-3120.	1.2	19
39	Microfluidic rheology of active particle suspensions: Kinetic theory. <i>Biomicrofluidics</i> , 2016, 10, 043505.	1.2	17
40	The instability of a sedimenting suspension of weakly flexible fibres. <i>Journal of Fluid Mechanics</i> , 2014, 756, 935-964.	1.4	14
41	Swimming in shear. <i>Journal of Fluid Mechanics</i> , 2014, 744, 1-4.	1.4	14
42	Curvature-driven feedback on aggregation—diffusion of proteins in lipid bilayers. <i>Soft Matter</i> , 2021, 17, 8373-8386.	1.2	14
43	Trapping, gliding, vaulting: transport of semiflexible polymers in periodic post arrays. <i>Soft Matter</i> , 2020, 16, 5534-5544.	1.2	13
44	A three-dimensional small-deformation theory for electrohydrodynamics of dielectric drops. <i>Journal of Fluid Mechanics</i> , 2021, 914, .	1.4	13
45	Effect of flexibility on the growth of concentration fluctuations in a suspension of sedimenting fibers: Particle simulations. <i>Physics of Fluids</i> , 2016, 28, .	1.6	12
46	From diffusive motion to local aggregation: Effect of surface contamination in diplophoresis. <i>Soft Matter</i> , 2011, 7, 10720.	1.2	10
47	Spontaneous Flows in Suspensions of Active Cyclic Swimmers. <i>Journal of Nonlinear Science</i> , 2015, 25, 1125-1139.	1.0	10
48	Transport phenomena in fluid films with curvature elasticity. <i>Journal of Fluid Mechanics</i> , 2020, 905, .	1.4	10
49	Shear-induced dispersion in peristaltic flow. <i>Physics of Fluids</i> , 2020, 32, .	1.6	9
50	Falling jets of particles in viscous fluids. <i>Physics of Fluids</i> , 2009, 21, 123303.	1.6	8
51	Interfacial instabilities in active viscous films. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2019, 269, 57-64.	1.0	7
52	Direct Numerical Simulations of Electrophoretic Deposition of Charged Colloidal Suspensions. <i>Key Engineering Materials</i> , 2012, 507, 47-51.	0.4	5
53	Signatures of elastoviscous buckling in the dilute rheology of stiff polymers. <i>Journal of Fluid Mechanics</i> , 2021, 919, .	1.4	5
54	Self-induced hydrodynamic coil-stretch transition of active polymers. <i>Physical Review E</i> , 2022, 105, 014608.	0.8	5

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55	Electrohydrodynamic instabilities in freely suspended viscous films under normal electric fields. <i>Physical Review Fluids</i> , 2021, 6, .	1.0	4
56	Special Issue Editorial: Emergent Collective Behavior: From Fish Schools to Bacterial Colonies. <i>Journal of Nonlinear Science</i> , 2015, 25, 1051-1052.	1.0	3
57	Physical mechanisms of platelet formation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 21841-21843.	3.3	2
58	Spontaneous directional flow of active magnetic particles. <i>Physical Review E</i> , 2021, 103, L040601.	0.8	2
59	Instability of a planar fluid interface under a tangential electric field in a stagnation point flow. <i>Journal of Fluid Mechanics</i> , 2022, 931, .	1.4	1
60	Active suspensions and their nonlinear models. <i>IEICE Proceeding Series</i> , 2014, 2, 39-39.	0.0	0