Jean-Luc Thiffeault

List of Publications by Year
in descending order

84	2,054	218677	265206
papers	citations	26 h-index	42 g-index

87	87	87	1133
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Frontiers of chaotic advection. Reviews of Modern Physics, 2017, 89, .	45.6	146
2	Stirring by squirmers. Journal of Fluid Mechanics, 2011, 669, 167-177.	3.4	134
3	Using multiscale norms to quantify mixing and transport. Nonlinearity, 2012, 25, R1-R44.	1.4	102
4	Optimal stirring strategies for passive scalar mixing. Journal of Fluid Mechanics, 2011, 675, 465-476.	3.4	100
5	Detecting coherent structures using braids. Physica D: Nonlinear Phenomena, 2012, 241, 95-105.	2.8	75
6	Braids of entangled particle trajectories. Chaos, 2010, 20, 017516.	2.5	68
7	Classification and Casimir invariants of Lieâ€“Poisson brackets. Physica D: Nonlinear Phenomena, 2000, 136, 205-244.	2.8	67
8	Stirring by swimming bodies. Physics Letters, Section A: General, Atomic and Solid State Physics, 2010, 374, 3487-3490.	2.1	67
9	Topological mixing with ghost rods. Physical Review E, 2006, 73, 036311.	2.1	63
10	Topology, braids and mixing in fluids. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2006, 364, 3251-3266.	3.4	55
11	Walls Inhibit Chaotic Mixing. Physical Review Letters, 2007, 99, 114501.	7.8	54
12	Energyâ€conserving truncations for convection with shear flow. Physics of Fluids, 1996, 8, 1715-1719.	4.0	53
13	Distribution of particle displacements due to swimming microorganisms. Physical Review E, 2015, 92, 023023.	2.1	53
14	Measuring Topological Chaos. Physical Review Letters, 2005, 94, 084502.	7.8	48
15	A bound on mixing efficiency for the advectionâ€“diffusion equation. Journal of Fluid Mechanics, 2004, 521, 105-114.	3.4	42
16	Multiscale mixing efficiencies for steady sources. Physical Review E, 2006, 74, 025301.	2.1	37
17	Slow decay of concentration variance due to no-slip walls in chaotic mixing. Physical Review E, 2008, 78, 026211.	2.1	37
18	Chaotic mixing in a torus map. Chaos, 2003, 13, 502-507.	2.5	35

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19	Stirring up trouble: Multi-scale mixing measures for steady scalar sources. Physica D: Nonlinear Phenomena, 2007, 231, 143-164.	2.8	34
20	Topological Optimization of Rod-Stirring Devices. SIAM Review, 2011, 53, 723-743.	9.5	34
21	Nonlinear dynamics of phase separation in thin films. Nonlinearity, 2010, 23, 1559-1583.	1.4	30
22	Finite-time braiding exponents. Chaos, 2015, 25, 087407.	2.5	29
23	Geometrical constraints on finite-time Lyapunov exponents in two and three dimensions. Chaos, 2001, 11, 16.	2.5	27
24	Advectionâ€“diffusion in Lagrangian coordinates. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 309, 415-422.	2.1	27
25	Finite extension of polymers in turbulent flow. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 308, 445-450.	2.1	27
26	Stretching and curvature of material lines in chaotic flows. Physica D: Nonlinear Phenomena, 2004, 198, 169-181.	2.8	27
27	Optimizing the source distribution in fluid mixing. Physica D: Nonlinear Phenomena, 2008, 237, 918-929.	2.8	26
28	A Stokesian viscoelastic flow: Transition to oscillations and mixing. Physica D: Nonlinear Phenomena, 2011, 240, 1602-1614.	2.8	26
29	Rotation Shields Chaotic Mixing Regions from No-Slip Walls. Physical Review Letters, 2010, 104, 204502.	7.8	25
30	Topology of chaotic mixing patterns. Chaos, 2008, 18, 033123.	2.5	24
31	Open-flow mixing: Experimental evidence for strange eigenmodes. Physics of Fluids, 2009, 21, .	4.0	24
32	On the minimum dilatation of pseudo-Anosov homeromorphisms on surfaces of small genus. Annales De L'Institut Fourier, 2011, 61, 105-144.	0.6	24
33	Moving walls accelerate mixing. Physical Review E, 2011, 84, 036313.	2.1	23
34	Bubbles and filaments: Stirring a Cahn-Hilliard fluid. Physical Review E, 2007, 75, 016216.	2.1	21
35	Topological chaos in spatially periodic mixers. Physica D: Nonlinear Phenomena, 2006, 221, 92-100.	2.8	20
36	Covariant time derivatives for dynamical systems. Journal of Physics A, 2001, 34, 5875-5885.	1.6	19

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37	Measures of mixing quality in open flows with chaotic advection. Physics of Fluids, 2011, 23, .	4.0	19
38	Topological Entropy of Braids on the Torus. SIAM Journal on Applied Dynamical Systems, 2007, 6, 79-98.	1.6	17
39	Fluid transport and mixing by an unsteady microswimmer. Physical Review Fluids, 2017, 2, .	2.5	16
40	Derivatives and constraints in chaotic flows: asymptotic behaviour and a numerical method. Physica D: Nonlinear Phenomena, 2002, 172, 139-161.	2.8	15
41	Scalar Decay in Chaotic Mixing. , 2008, , 3-36.		15
42	Can phoretic particles swim in two dimensions?. Physical Review E, 2016, 94, 062606.	2.1	15
43	Microorganism billiards. Physica D: Nonlinear Phenomena, 2017, 341, 33-44.	2.8	15
44	Higher-order continuum approximation for rarefied gases. Physics of Fluids, 2003, 15, 3558-3567.	4.0	14
45	Shape matters: a Brownian microswimmer in a channel. Journal of Fluid Mechanics, 2021, 916, .	3.4	14
46	The strange eigenmode in Lagrangian coordinates. Chaos, 2004, 14, 531-538.	2.5	12
47	Dynamical effects and phase separation in cooled binary fluid films. Physical Review E, 2007, 76, 035303.	2.1	11
48	On the minimum dilatation of braids on punctured discs. Geometriae Dedicata, 2011, 152, 165-182.	0.3	11
49	The Mathematics of Taffy Pullers. Mathematical Intelligencer, 2018, 40, 26-35.	0.2	11
50	The twisted top. Physics Letters, Section A: General, Atomic and Solid State Physics, 2001, 283, 335-341.	2.1	10
51	Phase Separation in the Advective Cahnâ€“Hilliard Equation. Journal of Nonlinear Science, 2020, 30, 2821-2845.	2.1	10
52	Dynamical range of the WINDMI model: An exploration of possible magnetospheric plasma states. Journal of Geophysical Research, 2000, 105, 12983-12996.	3.3	9
53	Invariants and Labels in Lie-Poisson Systems. Annals of the New York Academy of Sciences, 1998, 867, 109-119.	3.8	8
54	Trajectory entanglement in dense granular materials. Journal of Statistical Mechanics: Theory and Experiment, 2012, 2012, P06008.	2.3	8

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55	Optimal Heat Transfer and Optimal Exit Times. SIAM Journal on Applied Mathematics, 2018, 78, 591-608.	1.8	8
56	Fall and rise of a viscoelastic filament. Journal of Fluid Mechanics, 2006, 563, 283.	3.4	7
57	Bounds on the mixing enhancement for a stirred binary fluid. Physica D: Nonlinear Phenomena, 2008, 237, 2673-2684.	2.8	7
58	The mixing efficiency of open flows. Physica D: Nonlinear Phenomena, 2011, 240, 180-186.	2.8	7
59	Lyapunov Exponents for the Random Product of Two Shears. Journal of Nonlinear Science, 2019, 29, 593-620.	2.1	7
60	Unravelling hagfish slime. Journal of the Royal Society Interface, 2019, 16, 20180710.	3.4	7
61	Chaos in the Gulf. Science, 2010, 330, 458-459.	12.6	6
62	Estimating Topological Entropy from the Motion of Stirring Rods. Procedia IUTAM, 2013, 7, 117-126.	1.2	6
63	Using braids to quantify interface growth and coherence in a rotor-oscillator flow. Physical Review Fluids, 2020, 5, .	2.5	6
64	Reaching for the surface: Spheroidal microswimmers in surface gravity waves. Physical Review Fluids, 2022, 7, .	2.5	6
65	The onset of dissipation in the kinematic dynamo. Physics of Plasmas, 2003, 10, 259-265.	1.9	5
66	Mixing effectiveness depends on the sourceâ€“sink structure: simulation results. Journal of Statistical Mechanics: Theory and Experiment, 2008, 2008, P07018.	2.3	5
67	On mix-norms and the rate of decay of correlations. Nonlinearity, 2021, 34, 3762-3782.	1.4	5
68	Nonuniform mixing. Physical Review Fluids, 2021, 6, .	2.5	5
69	The mathematics of burger flipping. Physica D: Nonlinear Phenomena, 2022, 439, 133410.	2.8	5
70	Numerical Study of Mixing in Microchannels With Patterned Zeta Potential Surfaces. , 2003, , 573.		4
71	Topological Entropy and Secondary Folding. Journal of Nonlinear Science, 2013, 23, 511-524.	2.1	4
72	Winding of a Brownian particle around a point vortex. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180347.	3.4	4

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73	Continuum equations for stellar dynamics. , 2003, , 377-392.		3
74	A Low-Reynolds-Number Treadmilling Swimmer Near a Semi-infinite Wall. The IMA Volumes in Mathematics and Its Applications, 2012, , 197-206.	0.5	3
75	Moving Forward by Shaking Sideways. Symmetry, 2022, 14, 620.	2.2	2
76	Open-flow mixing and transfer operators. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20210028.	3.4	2
77	Braids in the heart: global measures of mixing for cardiovascular flows. Flow, 2022, 2, .	2.6	2
78	Corrigendum to â€œStirring up trouble: Multi-scale mixing measures for steady scalar sourcesâ€•[Physica D 231 (2007) 143â€“164]. Physica D: Nonlinear Phenomena, 2011, 240, 1901-1902.	2.8	1
79	Velocity fluctuations in a dilute suspension of viscous vortex rings. Physical Review Fluids, 2019, 4, .	2.5	1
80	Anisotropic active Brownian particle with a fluctuating propulsion force. Physical Review E, 2022, 106, .	2.1	1
81	Book Review ofTurbulent Flows, by Stephen B. Pope, Cambridge University Press, 2000, XXXIV+ 771 pp., Â£ 35.00 paperback (ISBN 0-521-59886-9), Â£ 80.00 hardback (ISBN-0-521-59125-2).. Geophysical and Astrophysical Fluid Dynamics, 2004, 98, 365-366.	1.2	0
82	Topological Entropy of Braids on the Torus. SIAM Journal on Imaging Sciences, 2008, 1, 79.	2.2	0
83	Editorial: Mathematical problems in physical fluid dynamics: part I. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20210056.	3.4	0
84	Editorial: Mathematical problems in physical fluid dynamics: part II. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20210057.	3.4	0