

Julien Tailleur

List of Publications by Year in descending order

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68
papers

7,047
citations

87888

38
h-index

106344

65
g-index

69
all docs

69
docs citations

69
times ranked

2702
citing authors

#	ARTICLE	IF	CITATIONS
1	Motility-Induced Phase Separation. Annual Review of Condensed Matter Physics, 2015, 6, 219-244.	14.5	1,045
2	Statistical Mechanics of Interacting Run-and-Tumble Bacteria. Physical Review Letters, 2008, 100, 218103.	7.8	655
3	How Far from Equilibrium Is Active Matter?. Physical Review Letters, 2016, 117, 038103.	7.8	429
4	When are active Brownian particles and run-and-tumble particles equivalent? Consequences for motility-induced phase separation. Europhysics Letters, 2013, 101, 20010.	2.0	373
5	Pressure is not a state function for generic active fluids. Nature Physics, 2015, 11, 673-678.	16.7	356
6	Pressure and Phase Equilibria in Interacting Active Brownian Spheres. Physical Review Letters, 2015, 114, 198301.	7.8	268
7	Sedimentation, trapping, and rectification of dilute bacteria. Europhysics Letters, 2009, 86, 60002.	2.0	265
8	Arrested phase separation in reproducing bacteria creates a generic route to pattern formation. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 11715-11720.	7.1	241
9	Pattern Formation in Self-Propelled Particles with Density-Dependent Motility. Physical Review Letters, 2012, 108, 248101.	7.8	227
10	Active brownian particles and run-and-tumble particles: A comparative study. European Physical Journal: Special Topics, 2015, 224, 1231-1262.	2.6	195
11	Differential Dynamic Microscopy of Bacterial Motility. Physical Review Letters, 2011, 106, 018101.	7.8	165
12	From Phase to Microphase Separation in Flocking Models: The Essential Role of Nonequilibrium Fluctuations. Physical Review Letters, 2015, 114, 068101.	7.8	156
13	Simulating Rare Events in Dynamical Processes. Journal of Statistical Physics, 2011, 145, 787-811.	1.2	149
14	Active Particles with Soft and Curved Walls: Equation of State, Ratchets, and Instabilities. Physical Review Letters, 2016, 117, 098001.	7.8	132
15	Run-and-Tumble Particles with Hydrodynamics: Sedimentation, Trapping, and Upstream Swimming. Physical Review Letters, 2010, 104, 258101.	7.8	130
16	Entropy Production in Field Theories without Time-Reversal Symmetry: Quantifying the Non-Equilibrium Character of Active Matter. Physical Review X, 2017, 7, .	8.9	117
17	Differential Dynamic Microscopy: A High-Throughput Method for Characterizing the Motility of Microorganisms. Biophysical Journal, 2012, 103, 1637-1647.	0.5	116
18	Generalized thermodynamics of motility-induced phase separation: phase equilibria, Laplace pressure, and change of ensembles. New Journal of Physics, 2018, 20, 075001.	2.9	115

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19	Generalized thermodynamics of phase equilibria in scalar active matter. <i>Physical Review E</i> , 2018, 97, 020602.	2.1	112
20	A numerical approach to large deviations in continuous time. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2007, 2007, P03004-P03004.	2.3	109
21	Statistical mechanics of active Ornstein-Uhlenbeck particles. <i>Physical Review E</i> , 2021, 103, 032607.	2.1	107
22	Revisiting the Flocking Transition Using Active Spins. <i>Physical Review Letters</i> , 2013, 111, 078101.	7.8	105
23	Probing rare physical trajectories with Lyapunov weighted dynamics. <i>Nature Physics</i> , 2007, 3, 203-207.	16.7	104
24	Lattice models of nonequilibrium bacterial dynamics. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2011, 2011, P02029.	2.3	102
25	Mapping out-of-equilibrium into equilibrium in one-dimensional transport models. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2008, 41, 505001.	2.1	87
26	Optimizing active work: Dynamical phase transitions, collective motion, and jamming. <i>Physical Review E</i> , 2019, 99, 022605.	2.1	73
27	Emergent Spatial Structures in Flocking Models: A Dynamical System Insight. <i>Physical Review Letters</i> , 2014, 112, 148102.	7.8	68
28	Coherence-Preserving Trap Architecture for Long-Term Control of Giant Ryberg Atoms. <i>Physical Review Letters</i> , 2004, 93, 103001.	7.8	61
29	Activated Escape of a Self-Propelled Particle from a Metastable State. <i>Physical Review Letters</i> , 2019, 122, 258001.	7.8	59
30	Mechanical pressure and momentum conservation in dry active matter. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2018, 51, 044003.	2.1	57
31	Exact Hydrodynamic Description of Active Lattice Gases. <i>Physical Review Letters</i> , 2018, 120, 268003.	7.8	57
32	Mapping Nonequilibrium onto Equilibrium: The Macroscopic Fluctuations of Simple Transport Models. <i>Physical Review Letters</i> , 2007, 99, 150602.	7.8	53
33	Freezing a Flock: Motility-Induced Phase Separation in Polar Active Liquids. <i>Physical Review X</i> , 2019, 9, .	8.9	53
34	Time irreversibility in active matter, from micro to macro. <i>Nature Reviews Physics</i> , 2022, 4, 167-183.	26.6	51
35	Optimized Diffusion of Run-and-Tumble Particles in Crowded Environments. <i>Physical Review Letters</i> , 2018, 120, 198103.	7.8	49
36	Flocking with discrete symmetry: The two-dimensional active Ising model. <i>Physical Review E</i> , 2015, 92, 042119.	2.1	47

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37	Pattern formation in flocking models: A hydrodynamic description. <i>Physical Review E</i> , 2015, 92, 062111.	2.1	46
38	Cooperative pattern formation in multi-component bacterial systems through reciprocal motility regulation. <i>Nature Physics</i> , 2020, 16, 1152-1157.	16.7	44
39	Phase diagrams of two-lane driven diffusive systems. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2011, 2011, P06009.	2.3	38
40	Large deviations of Lyapunov exponents. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2013, 46, 254002.	2.1	34
41	Sedimentation of self-propelled Janus colloids: polarization and pressure. <i>New Journal of Physics</i> , 2018, 20, 115001.	2.9	33
42	Nonequilibrium Phase Transitions in the Extraction of Membrane Tubes by Molecular Motors. <i>Physical Review Letters</i> , 2009, 102, 118109.	7.8	29
43	Simulating structural transitions by direct transition current sampling: The example of LJ38. <i>Journal of Chemical Physics</i> , 2011, 135, 034108.	3.0	29
44	Active depinning of bacterial droplets: The collective surfing of <i>Bacillus subtilis</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 5958-5963.	7.1	28
45	Anomalous Transport of Tracers in Active Baths. <i>Physical Review Letters</i> , 2022, 129, .	7.8	28
46	Kramers Equation and Supersymmetry. <i>Journal of Statistical Physics</i> , 2006, 122, 557-595.	1.2	27
47	Disorder-Induced Long-Ranged Correlations in Scalar Active Matter. <i>Physical Review Letters</i> , 2021, 126, 048003.	7.8	22
48	Simulation of large deviation functions using population dynamics. , 2009, , .		21
49	Non-Gaussian noise without memory in active matter. <i>Physical Review E</i> , 2018, 98, .	2.1	21
50	Surface Tensions between Active Fluids and Solid Interfaces: Bare vs Dressed. <i>Physical Review Letters</i> , 2020, 124, 248003.	7.8	19
51	Fluctuation-Induced Phase Separation in Metric and Topological Models of Collective Motion. <i>Physical Review Letters</i> , 2021, 126, 148001.	7.8	18
52	Lamellar to Micellar Phases and Beyond: When Tactic Active Systems Admit Free Energy Functionals. <i>Physical Review Letters</i> , 2020, 125, 208003.	7.8	17
53	An alternative mechanism of early nodal clustering and myelination onset in GABAergic neurons of the central nervous system. <i>Glia</i> , 2020, 68, 1891-1909.	4.9	15
54	Susceptibility of Polar Flocks to Spatial Anisotropy. <i>Physical Review Letters</i> , 2022, 128, .	7.8	13

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55	Multilane driven diffusive systems. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2016, 49, 095601.	2.1	12
56	Disordered boundaries destroy bulk phase separation in scalar active matter. <i>Physical Review E</i> , 2022, 105, 044603.	2.1	12
57	Dynamics of an unbounded interface between ordered phases. <i>Physical Review E</i> , 2004, 69, 026125.	2.1	11
58	Zero-range processes with saturated condensation: the steady state and dynamics. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2010, 2010, P02013.	2.3	9
59	First-order phase transitions from poles in asymptotic representations of partition functions. <i>Physical Review E</i> , 2010, 81, 030101.	2.1	8
60	Distribution of active forces in the cell cortex. <i>Soft Matter</i> , 2019, 15, 6952-6966.	2.7	7
61	Kinetic Monte-Carlo Algorithms for Active Matter Systems. <i>Physical Review Letters</i> , 2021, 127, 150602.	7.8	5
62	Large-scale fluctuations of the largest Lyapunov exponent in diffusive systems. <i>Europhysics Letters</i> , 2015, 110, 10006.	2.0	4
63	The role of noise and advection in absorbing state phase transitions. <i>Europhysics Letters</i> , 2010, 90, 16003.	2.0	3
64	Impact of a mechanical shear stress on intracellular trafficking. <i>Soft Matter</i> , 2017, 13, 5298-5306.	2.7	2
65	Lyapunov exponents of stochastic systems "from micro to macro. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2016, 2016, 034001.	2.3	1
66	Reply to Kovács et al.: Surfing or sliding: The act of naming and its implications. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, E8803-E8804.	7.1	1
67	Focus on Active Colloids and Nanoparticles. <i>New Journal of Physics</i> , 2020, 22, 060201.	2.9	1
68	MAPPING REACTION PATHS IN PHASE-SPACE. , 2006, , .		0