Matthieu Wyart

List of Publications by Year
in descending order

90 papers	6,054 citations	66234 42 h-index	76769 74 g-index
93 all docs	93 docs citations	93 times ranked	3222 citing authors

#	Article	IF	Citations
1	Mean-field description for the architecture of low-energy excitations in glasses. Physical Review E, 2022, 105, 044601.	0.8	6
2	Hydrodynamic-driven morphogenesis of karst draperies: spatio-temporal analysis of the two-dimensional impulse response. Journal of Fluid Mechanics, 2021, 910, .	1.4	7
3	Inferring the flow properties of epithelial tissues from their geometry. New Journal of Physics, 2021, 23, 033004.	1.2	21
4	Nonlocal Effects Reflect the Jamming Criticality in Frictionless Granular Flows Down Inclines. Physical Review Letters, 2021, 126, 228002.	2.9	9
5	Landscape and training regimes in deep learning. Physics Reports, 2021, 924, 1-18.	10.3	9
6	Thermally activated flow in models of amorphous solids. Physical Review E, 2021, 104, 025010.	0.8	9
7	Thermal origin of quasilocalized excitations in glasses. Physical Review E, 2020, 102, 062110.	0.8	17
8	Jamming with Tunable Roughness. Physical Review Letters, 2020, 124, 208001.	2.9	9
9	Infinitesimal asphericity changes the universality of the jamming transition. Journal of Statistical Mechanics: Theory and Experiment, 2020, 2020, 033302.	0.9	6
10	Direct coupling analysis of epistasis in allosteric materials. PLoS Computational Biology, 2020, 16, e1007630.	1.5	14
11	Disentangling feature and lazy training in deep neural networks. Journal of Statistical Mechanics: Theory and Experiment, 2020, 2020, 113301.	0.9	19
12	Asymptotic learning curves of kernel methods: empirical data versus teacherâ€“student paradigm. Journal of Statistical Mechanics: Theory and Experiment, 2020, 2020, 124001.	0.9	13
13	Interparticle Friction Leads to Nonmonotonic Flow Curves and Hysteresis in Viscous Suspensions. Physical Review X, 2019, 9, .	2.8	14
14	Jamming transition as a paradigm to understand the loss landscape of deep neural networks. Physical Review E, 2019, 100, 012115.	0.8	44
15	Mechanics of Allostery: Contrasting the Induced Fit and Population Shift Scenarios. Biophysical Journal, 2019, 117, 1954-1962.	0.2	13
16	A jamming transition from under- to over-parametrization affects generalization in deep learning. Journal of Physics A: Mathematical and Theoretical, 2019, 52, 474001.	0.7	49
17	How collective asperity detachments nucleate slip at frictional interfaces. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 23977-23983.	3.3	22
18	Theory for the density of interacting quasilocalized modes in amorphous solids. Physical Review E, 2019, 99, 023003.	0.8	24

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19	Allostery in Its Many Disguises: From Theory to Applications. Structure, 2019, 27, 566-578.	1.6	285
20	Fast generation of ultrastable computer glasses by minimization of an augmented potential energy. Physical Review E, 2019, 99, 012106.	0.8	47
21	Microscopic processes controlling the Herschel-Bulkley exponent. Physical Review E, 2018, 97, 012603.	0.8	19
22	Spatial structure of quasilocalized vibrations in nearly jammed amorphous solids. Physical Review E, 2018, 98, .	0.8	60
23	Elastoplastic description of sudden failure in athermal amorphous materials during quasistatic loading. Physical Review E, 2018, 98, .	0.8	58
24	Universality of jamming of nonspherical particles. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 11736-11741.	3.3	52
25	Theory for Swap Acceleration near the Glass and Jamming Transitions for Continuously Polydisperse Particles. Physical Review X, 2018, 8, .	2.8	33
26	Principles for Optimal Cooperativity in Allosteric Materials. Biophysical Journal, 2018, 114, 2787-2798.	0.2	30
27	Shear fronts in shear-thickening suspensions. Physical Review Fluids, 2018, 3, .	1.0	31
28	Effect of friction on dense suspension flows of hard particles. Physical Review E, 2017, 95, 012605.	0.8	36
29	Architecture and coevolution of allosteric materials. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 2526-2531.	3.3	97
30	Scaling description of non-local rheology. Soft Matter, 2017, 13, 3794-3801.	1.2	4
31	Friction law and hysteresis in granular materials. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 9284-9289.	3.3	49
32	Edge mode amplification in disordered elastic networks. Soft Matter, 2017, 13, 5795-5801.	1.2	8
33	Does a Growing Static Length Scale Control the Glass Transition?. Physical Review Letters, 2017, 119, 195501.	2.9	63
34	Unifying Suspension and Granular flows near Jamming. EPJ Web of Conferences, 2017, 140, 01003.	0.1	2
35	Unsteady flow and particle migration in dense, non-Brownian suspensions. Journal of Rheology, 2016, 60, 905-916.	1.3	87
36	Model for the erosion onset of a granular bed sheared by a viscous fluid. Physical Review E, 2016, 93, 012903.	0.8	8

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37	Phase diagram for inertial granular flows. Physical Review E, 2016, 94, 012904.	0.8	43
38	Mean-Field Description of Plastic Flow in Amorphous Solids. Physical Review X, 2016, 6, .	2.8	49
39	Evidence for Marginal Stability in Emulsions. Physical Review Letters, 2016, 117, 208001.	2.9	14
40	Scale-free channeling patterns near the onset of erosion of sheared granular beds. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 11788-11793.	3.3	16
41	Effect of particle collisions in dense suspension flows. Physical Review E, 2016, 94, 022601.	0.8	13
42	On variational arguments for vibrational modes near jamming. Europhysics Letters, 2016, 114, 26003.	0.7	39
43	Unified theory of inertial granular flows and non-Brownian suspensions. Physical Review E, 2015, 91, 062206.	0.8	80
44	Adaptive elastic networks as models of supercooled liquids. Physical Review E, 2015, 92, 022310.	0.8	7
45	Dynamics and Correlations among Soft Excitations in Marginally Stable Glasses. Physical Review Letters, 2015, 114, 247208.	2.9	7
46	Criticality in the Approach to Failure in Amorphous Solids. Physical Review Letters, 2015, 115, 168001.	2.9	64
47	Theory of the jamming transition at finite temperature. Journal of Chemical Physics, 2015, 142, 164503.	1.2	50
48	Marginal Stability in Structural, Spin, and Electron Glasses. Annual Review of Condensed Matter Physics, 2015, 6, 177-200.	5.2	146
49	Evolution of Covalent Networks under Cooling: Contrasting the Rigidity Window and Jamming Scenarios. Physical Review Letters, 2014, 113, 215504.	2.9	26
50	Length scales and self-organization in dense suspension flows. Physical Review E, 2014, 89, 022305.	0.8	33
51	Force distribution affects vibrational properties in hard-sphere glasses. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 17054-17059.	3.3	100
52	On the density of shear transformations in amorphous solids. Europhysics Letters, 2014, 105, 26003.	0.7	82
53	Breakdown of continuum elasticity in amorphous solids. Soft Matter, 2014, 10, 5085.	1.2	91
54	Scaling description of the yielding transition in soft amorphous solids at zero temperature. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 14382-14387.	3.3	204

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55	Effects of coordination and pressure on sound attenuation, boson peak and elasticity in amorphous solids. Soft Matter, 2014, 10, 5628.	1.2	167
56	Granulation and bistability in non-Brownian suspensions. Rheologica Acta, 2014, 53, 755-764.	1.1	43
57	Simulations of driven overdamped frictionless hard spheres. Computer Physics Communications, 2013, 184, 628-637.	3.0	21
58	Phonon gap and localization lengths in floppy materials. Soft Matter, 2013, 9, 146-154.	1.2	61
59	Low-energy non-linear excitations in sphere packings. Soft Matter, 2013, 9, 8252.	1.2	117
60	Why glass elasticity affects the thermodynamics and fragility of supercooled liquids. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 6307-6312.	3.3	42
61	Marginal Stability Constrains Force and Pair Distributions at Random Close Packing. Physical Review Letters, 2012, 109, 125502.	2.9	122
62	A unified framework for non-Brownian suspension flows and soft amorphous solids. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 4798-4803.	3.3	153
63	Toward a microscopic description of flow near the jamming threshold. Europhysics Letters, 2012, 99, 58003.	0.7	36
64	Proprioceptive Coupling within Motor Neurons Drives C.Âelegans Forward Locomotion. Neuron, 2012, 76, 750-761.	3.8	219
65	Curling instability induced by swelling. Soft Matter, 2011, 7, 1506.	1.2	43
66	Elasticity of Soft Particles and Colloids near the Jamming Threshold. , 2011, , 195-206.		1
67	The jamming scenarioâ€"an introduction and outlook. , 2011, , 298-340.		22
68	Biomechanical analysis of gait adaptation in the nematode <i>Caenorhabditis elegans</i>. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 20323-20328.	3.3	165
69	Correlations between Vibrational Entropy and Dynamics in Liquids. Physical Review Letters, 2010, 104, 095901.	2.9	35
70	Evaluating Gene Expression Dynamics Using Pairwise RNA FISH Data. PLoS Computational Biology, 2010, 6, e1000979.	1.5	15
71	Scaling of phononic transport with connectivity in amorphous solids. Europhysics Letters, 2010, 89, 64001.	0.7	97
72	Heat transport in model jammed solids. Physical Review E, 2010, 81, 021301.	0.8	85

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73	On the dependence of the avalanche angle on the granular layer thickness. Europhysics Letters, 2009, 85, 24003.	0.7	10
74	Geometric interpretation of previtrification in hard sphere liquids. Journal of Chemical Physics, 2009, 131, 024504.	1.2	103
75	Energy Transport in Jammed Sphere Packings. Physical Review Letters, 2009, 102, 038001.	2.9	91
76	Elasticity of Floppy and Stiff Random Networks. Physical Review Letters, 2008, 101, 215501.	2.9	182
77	Relation between bidâ€"ask spread, impact and volatility in order-driven markets. Quantitative Finance, 2008, 8, 41-57.	0.9	126
78	Heterogeneous dynamics, marginal stability and soft modes in hard sphere glasses. Journal of Statistical Mechanics: Theory and Experiment, 2007, 2007, L08003-L08003.	0.9	87
79	Self-referential behaviour, overreaction and conventions in financial markets. Journal of Economic Behavior and Organization, 2007, 63, 1-24.	1.0	46
80	Excess Vibrational Modes and the Boson Peak in Model Glasses. Physical Review Letters, 2007, 98, .	2.9	106
81	On the rigidity of a hard-sphere glass near random close packing. Europhysics Letters, 2006, 76, 149-155.	0.7	96
82	Dynamical susceptibility of glass formers: Contrasting the predictions of theoretical scenarios. Physical Review E, 2005, 71, 041505.	0.8	243
83	Effects of compression on the vibrational modes of marginally jammed solids. Physical Review E, 2005, 72, 051306.	0.8	333
84	Geometric origin of excess low-frequency vibrational modes in weakly connected amorphous solids. Europhysics Letters, 2005, 72, 486-492.	0.7	321
85	Fluctuations and response in financial markets: the subtle nature of â€˜randomâ€™ price changes. Quantitative Finance, 2004, 4, 176-190.	0.9	346
86	Statistical models for company growth. Physica A: Statistical Mechanics and Its Applications, 2003, 326, 241-255.	1.2	39
87	Fluctuations and Response in Financial Markets: The Subtle Nature of 'Random' Price Changes. SSRN Electronic Journal, 2003, , .	0.4	23
88	Statistical Models for Company Growth. SSRN Electronic Journal, 2003, , .	0.4	11
89	Fluctuations and response in financial markets: the subtle nature of â€˜randomâ€™ price changes. , 0, .		103
90	Self Referential Behaviour, Overreaction and Conventions in Financial Markets. SSRN Electronic Journal, 0, , .	0.4	4