HernÃ¡n A Makse

List of Publications by Year
in descending order

131 papers	15,125 citations	34105 52 h-index	18130 120 g-index
135 all docs	135 docs citations	135 times ranked	10067 citing authors

#	Article	IF	Citations
1	Identification of influential spreaders in complex networks. Nature Physics, 2010, 6, 888-893.	16.7	2,386
2	Self-similarity of complex networks. Nature, 2005, 433, 392-395.	27.8	1,196
3	Influence maximization in complex networks through optimal percolation. Nature, 2015, 524, 65-68.	27.8	822
4	A phase diagram for jammed matter. Nature, 2008, 453, 629-632.	27.8	787
5	Origins of fractality in the growth of complex networks. Nature Physics, 2006, 2, 275-281.	16.7	512
6	Influence of fake news in Twitter during the 2016 US presidential election. Nature Communications, 2019, 10, 7.	12.8	494
7	Modelling urban growth patterns. Nature, 1995, 377, 608-612.	27.8	392
8	Method for generating long-range correlations for large systems. Physical Review E, 1996, 53, 5445-5449.	2.1	355
9	Packing of Compressible Granular Materials. Physical Review Letters, 2000, 84, 4160-4163.	7.8	352
10	Spontaneous stratification in granular mixtures. Nature, 1997, 386, 379-382.	27.8	335
11	A small world of weak ties provides optimal global integration of self-similar modules in functional brain networks. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 2825-2830.	7.1	331
12	Laws of population growth. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 18702-18707.	7.1	299
13	Searching for superspreaders of information in real-world social media. Scientific Reports, 2014, 4, 5547.	3.3	290
14	The Area and Population of Cities: New Insights from a Different Perspective on Cities. American Economic Review, 2011, 101, 2205-2225.	8.5	287
15	Testing the thermodynamic approach to granular matter with a numerical model of a decisive experiment. Nature, 2002, 415, 614-617.	27.8	284
16	Why Effective Medium Theory Fails in Granular Materials. Physical Review Letters, 1999, 83, 5070-5073.	7.8	254
17	How to calculate the fractal dimension of a complex network: the box covering algorithm. Journal of Statistical Mechanics: Theory and Experiment, 2007, 2007, P03006-P03006.	2.3	252
18	Granular packings: Nonlinear elasticity, sound propagation, and collective relaxation dynamics. Physical Review E, 2004, 70, 061302.	2.1	241

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19	Avoiding catastrophic failure in correlated networks of networks. Nature Physics, 2014, 10, 762-767.	16.7	219
20	Scaling laws of human interaction activity. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 12640-12645.	7.1	207
21	Modeling urban growth patterns with correlated percolation. Physical Review E, 1998, 58, 7054-7062.	2.1	205
22	Spreading dynamics in complex networks. Journal of Statistical Mechanics: Theory and Experiment, 2013, 2013, P12002.	2.3	182
23	Stochastic Model for Surface Erosion via Ion Sputtering: Dynamical Evolution from Ripple Morphology to Rough Morphology. Physical Review Letters, 1995, 75, 4464-4467.	7.8	179
24	Scaling theory of transport in complex biological networks. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 7746-7751.	7.1	170
25	Collective Influence Algorithm to find influencers via optimal percolation in massively large social media. Scientific Reports, 2016, 6, 30062.	3.3	141
26	A review of fractality and self-similarity in complex networks. Physica A: Statistical Mechanics and Its Applications, 2007, 386, 686-691.	2.6	138
27	Edwards statistical mechanics for jammed granular matter. Reviews of Modern Physics, 2018, 90, .	45.6	135
28	Mean-field theory of random close packings of axisymmetric particles. Nature Communications, 2013, 4, 2194.	12.8	129
29	Small-World to Fractal Transition in Complex Networks: A Renormalization Group Approach. Physical Review Letters, 2010, 104, 025701.	7.8	121
30	Fundamental challenges in packing problems: from spherical to non-spherical particles. Soft Matter, 2014, 10, 4423.	2.7	115
31	3D bulk measurements of the force distribution in a compressed emulsion system. Faraday Discussions, 2003, 123, 207-220.	3.2	114
32	Large cities are less green. Scientific Reports, 2014, 4, 4235.	3.3	108
33	Possible Stratification Mechanism in Granular Mixtures. Physical Review Letters, 1997, 78, 3298-3301.	7.8	100
34	The k-core as a predictor of structural collapse in mutualistic ecosystems. Nature Physics, 2019, 15, 95-102.	16.7	100
35	Measuring the distribution of interdroplet forces in a compressed emulsion system. Physica A: Statistical Mechanics and Its Applications, 2003, 327, 201-212.	2.6	99
36	Experimental measurement of an effective temperature for jammed granular materials. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 2299-2304.	7.1	89

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37	A first-order phase transition defines the random close packing of hard spheres. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 5362-5379.	2.6	86
38	The Conundrum of Functional Brain Networks: Small-World Efficiency or Fractal Modularity. Frontiers in Physiology, 2012, 3, 123.	2.8	83
39	Scaling properties of driven interfaces in disordered media. Physical Review E, 1995, 52, 4087-4104.	2.1	82
40	Finding influential nodes for integration in brain networks using optimal percolation theory. Nature Communications, 2018, 9, 2274.	12.8	77
41	Dynamics of granular stratification. Physical Review E, 1998, 58, 3357-3367.	2.1	74
42	Measuring the Coordination Number and Entropy of a 3D Jammed Emulsion Packing by Confocal Microscopy. Physical Review Letters, 2007, 98, 248001.	7.8	73
43	Noisy Kuramoto-Sivashinsky equation for an erosion model. Physical Review E, 1996, 54, 3577-3580.	2.1	71
44	Scaling of Degree Correlations and Its Influence on Diffusion in Scale-Free Networks. Physical Review Letters, 2008, 100, 248701.	7.8	70
45	How does public opinion become extreme?. Scientific Reports, 2015, 5, 10032.	3.3	70
46	Granular Dynamics in Compaction and Stress Relaxation. Physical Review Letters, 2005, 95, 128001.	7.8	62
47	Tracer dispersion in a percolation network with spatial correlations. Physical Review E, 2000, 61, 583-586.	2.1	61
48	Dynamic particle tracking reveals the ageing temperature of a colloidal glass. Nature Physics, 2006, 2, 526-531.	16.7	61
49	Validation of Twitter opinion trends with national polling aggregates: Hillary Clinton vs Donald Trump. Scientific Reports, 2018, 8, 8673.	3.3	61
50	Continuous Avalanche Segregation of Granular Mixtures in Thin Rotating Drums. Physical Review Letters, 1999, 83, 3186-3189.	7.8	56
51	Adhesive loose packings of small dry particles. Soft Matter, 2015, 11, 6492-6498.	2.7	55
52	Mechanisms of granular spontaneous stratification and segregation in two-dimensional silos. Physical Review E, 1999, 59, 4408-4421.	2.1	54
53	Inferring personal economic status from social network location. Nature Communications, 2017, 8, 15227.	12.8	54
54	Model of brain activation predicts the neural collective influence map of the brain. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 3849-3854.	7.1	53

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55	Percolation phenomena: a broad-brush introduction with some recent applications to porous media, liquid water, and city growth. Physica A: Statistical Mechanics and Its Applications, 1999, 266, 5-16.	2.6	52
56	Entropy of Jammed Matter. Physical Review Letters, 2008, 101, 188001.	7.8	52
57	Collective behavior in the spatial spreading of obesity. Scientific Reports, 2012, 2, 454.	3.3	50
58	Efficient collective influence maximization in cascading processes with first-order transitions. Scientific Reports, 2017, 7, 45240.	3.3	50
59	The Evolutionary Dynamics of Protein-Protein Interaction Networks Inferred from the Reconstruction of Ancient Networks. PLoS ONE, 2013, 8, e58134.	2.5	47
60	Exploring the Complex Pattern of Information Spreading in Online Blog Communities. PLoS ONE, 2015, 10, e0126894.	2.5	45
61	Collective Influence of Multiple Spreaders Evaluated by Tracing Real Information Flow in Large-Scale Social Networks. Scientific Reports, 2016, 6, 36043.	3.3	45
62	Stratification instability in granular flows. Physical Review E, 1997, 56, 7008-7016.	2.1	43
63	Modularity map of the network of human cell differentiation. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 5750-5755.	7.1	40
64	Effect of long-range repulsive Coulomb interactions on packing structure of adhesive particles. Soft Matter, 2016, 12, 1836-1846.	2.7	40
65	Conditions for Viral Influence Spreading through Multiplex Correlated Social Networks. Physical Review X, 2014, 4, .	8.9	38
66	Jamming in two-dimensional packings. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 5137-5144.	2.6	37
67	Functional Translocation of Broca's Area in a Low-Grade Left Frontal Glioma: Graph Theory Reveals the Novel, Adaptive Network Connectivity. Frontiers in Neurology, 2019, 10, 702.	2.4	37
68	Particle dynamics and effective temperature of jammed granular matter in a slowly sheared three-dimensional Couette cell. Physical Review E, 2008, 77, 061309.	2.1	36
69	Inference and control of the nosocomial transmission of methicillin-resistant Staphylococcus aureus. ELife, 2018, 7, .	6.0	36
70	Equation of state for random sphere packings with arbitrary adhesion and friction. Soft Matter, 2017, 13, 421-427.	2.7	34
71	Predicting dengue outbreaks at neighbourhood level using human mobility in urban areas. Journal of the Royal Society Interface, 2020, 17, 20200691.	3.4	34
72	How People Interact in Evolving Online Affiliation Networks. Physical Review X, 2012, 2, .	8.9	33

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73	Structural Properties of Dense Hard Sphere Packings. Journal of Physical Chemistry B, 2014, 118, 10761-10766.	2.6	33
74	Long-range correlations in permeability fluctuations in porous rock. Physical Review E, 1996, 54, 3129-3134.	2.1	32
75	Jamming II: Edwardsâ€™ statistical mechanics of random packings of hard spheres. Physica A: Statistical Mechanics and Its Applications, 2011, 390, 427-455.	2.6	29
76	Influencer identification in dynamical complex systems. Journal of Complex Networks, 2020, 8, cnz029.	1.8	27
77	Edwards thermodynamics of the jamming transition for frictionless packings: Ergodicity test and role of angoricity and compactivity. Physical Review E, 2012, 86, 011305.	2.1	26
78	Pattern formation in sedimentary rocks: Connectivity, permeability, and spatial correlations. Physica A: Statistical Mechanics and Its Applications, 1996, 233, 587-605.	2.6	25
79	Statistical Signs of Social Influence on Suicides. Scientific Reports, 2014, 4, 6239.	3.3	24
80	IMDB Network Revisited: Unveiling Fractal and Modular Properties from a Typical Small-World Network. PLoS ONE, 2013, 8, e66443.	2.5	22
81	Novel method for generating long-range correlations. Chaos, Solitons and Fractals, 1995, 6, 295-303.	5.1	21
82	Nonlinear elasticity of granular media. Physica B: Condensed Matter, 2000, 279, 134-138.	2.7	21
83	Core language brain network for fMRI language task used in clinical applications. Network Neuroscience, 2020, 4, 134-154.	2.6	21
84	Symmetry group factorization reveals the structure-function relation in the neural connectome of Caenorhabditis elegans. Nature Communications, 2019, 10, 4961.	12.8	20
85	How the Brain Transitions from Conscious to Subliminal Perception. Neuroscience, 2019, 411, 280-290.	2.3	19
86	The jamming transition is a k-core percolation transition. Physica A: Statistical Mechanics and Its Applications, 2019, 516, 172-177.	2.6	19
87	Diversity increases the stability of ecosystems. PLoS ONE, 2020, 15, e0228692.	2.5	18
88	Fibration symmetries uncover the building blocks of biological networks. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 8306-8314.	7.1	18
89	Energy-landscape network approach to the glass transition. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 105101.	2.1	17
90	K-core robustness in ecological and financial networks. Scientific Reports, 2020, 10, 3357.	3.3	17

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91	Radiologist-Level Performance by Using Deep Learning for Segmentation of Breast Cancers on MRI Scans. Radiology: Artificial Intelligence, 2022, 4, e200231.	5.8	16
92	Digital contact tracing and network theory to stop the spread of COVID-19 using big-data on human mobility geolocalization. PLoS Computational Biology, 2022, 18, e1009865.	3.2	16
93	Jamming I: A volume function for jammed matter. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 4497-4509.	2.6	15
94	Angoricity and compactivity describe the jamming transition in soft particulate matter. Europhysics Letters, 2010, 91, 68001.	2.0	15
95	Jamming III: Characterizing randomness via the entropy of jammed matter. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 3978-3999.	2.6	14
96	Finding Influential Spreaders from Human Activity beyond Network Location. PLoS ONE, 2015, 10, e0136831.	2.5	14
97	Cavity method for force transmission in jammed disordered packings of hard particles. Soft Matter, 2014, 10, 7379.	2.7	13
98	A worldwide model for boundaries of urban settlements. Royal Society Open Science, 2018, 5, 180468.	2.4	13
99	Fractality and the percolation transition in complex networks. Chemical Engineering Science, 2009, 64, 4572-4575.	3.8	12
100	From force distribution to average coordination number in frictional granular matter. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 3972-3977.	2.6	12
101	Statistical theory of correlations in random packings of hard particles. Physical Review E, 2014, 89, 052207.	2.1	11
102	Distribution of volumes and coordination numbers in jammed matter: mesoscopic ensemble. Journal of Statistical Mechanics: Theory and Experiment, 2010, 2010, P12005.	2.3	10
103	The price of a vote: Diseconomy in proportional elections. PLoS ONE, 2018, 13, e0201654.	2.5	10
104	Comment on â€œKinetic Roughening in Slow Combustion of Paperâ€• Physical Review Letters, 1998, 80, 5706-5706.	7.8	9
105	Modeling stratification in two-dimensional sandpiles. Physica A: Statistical Mechanics and Its Applications, 1998, 249, 391-396.	2.6	8
106	A thermodynamic approach to slowly sheared granular matter. Physica A: Statistical Mechanics and Its Applications, 2003, 330, 83-90.	2.6	8
107	Collective Behaviour in Video Viewing: A Thermodynamic Analysis of Gaze Position. PLoS ONE, 2017, 12, e0168995.	2.5	8
108	Why polls fail to predict elections. Journal of Big Data, 2021, 8, .	11.0	8

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109	Matryoshka and disjoint cluster synchronization of networks. Chaos, 2022, 32, 041101.	2.5	8
110	Emergence of robustness in networks of networks. Physical Review E, 2017, 95, 062308.	2.1	7
111	Singularities and avalanches in interface growth with quenched disorder. Physical Review E, 1995, 52, 4080-4086.	2.1	6
112	Frequency-dependent attenuation and elasticity in unconsolidated earth materials: Effect of damping. Geophysics, 2014, 79, L41-L49.	2.6	6
113	High-resolution of particle contacts via fluorophore exclusion in deep-imaging of jammed colloidal packings. Physica A: Statistical Mechanics and Its Applications, 2018, 490, 1387-1395.	2.6	6
114	Maintaining trust when agents can engage in self-deception. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 8728-8733.	7.1	6
115	Circuits with broken fibration symmetries perform core logic computations in biological networks. PLoS Computational Biology, 2020, 16, e1007776.	3.2	6
116	Monolingual and bilingual language networks in healthy subjects using functional MRI and graph theory. Scientific Reports, 2021, 11, 10568.	3.3	6
117	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>K</mml:mi></mml:math> -core analysis of shear-thickening suspensions. Physical Review Fluids, 2022, 7, .	2.5	6
118	Eye-tracking as a proxy for coherence and complexity of texts. PLoS ONE, 2021, 16, e0260236.	2.5	5
119	Stress-dependent normal-mode frequencies from the effective mass of granular matter. Physical Review E, 2014, 89, 062202.	2.1	4
120	Density of states in granular media in the presence of damping. Physical Review E, 2015, 91, 062208.	2.1	4
121	Predicting synchronized gene coexpression patterns from fibration symmetries in gene regulatory networks in bacteria. BMC Bioinformatics, 2021, 22, 363.	2.6	4
122	Theory of random packings. , 2010, , .		3
123	Calculation of the Voronoi boundary for lens-shaped particles and spherocylinders. Journal of Statistical Mechanics: Theory and Experiment, 2013, 2013, P11009.	2.3	3
124	Power laws for cities. Physics World, 1997, 10, 22-23.	0.0	2
125	Experimental and computational studies of jamming. Journal of Physics Condensed Matter, 2005, 17, S2755-S2770.	1.8	2
126	Fast algorithm to identify minimal patterns of synchrony through fibration symmetries in large directed networks. Chaos, 2022, 32, 033120.	2.5	2

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127	Symmetry-driven network reconstruction through pseudobalanced coloring optimization. Journal of Statistical Mechanics: Theory and Experiment, 2022, 2022, 073403.	2.3	2
128	Elastic string in a random medium. Physical Review E, 1996, 53, 6573-6576.	2.1	1
129	NONLINEAR ELASTICITY AND THERMODYNAMICS OF GRANULAR MATERIALS. International Journal of Modeling, Simulation, and Scientific Computing, 2001, 04, 491-501.	1.4	1
130	Surface shape of two-dimensional granular piles. Journal of Statistical Mechanics: Theory and Experiment, 2004, 2004, P003-P003.	2.3	0
131	Nonlinear Elasticity and Thermodynamics of Granular Materials. , 2003, , 203-213.		0