Mason A Porter

List of Publications by Year
in descending order

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165 papers	13,770 citations	34105 52 h-index	23533 111 g-index
173 all docs	173 docs citations	173 times ranked	11126 citing authors

#	Article	IF	Citations
1	Community Structure in Time-Dependent, Multiscale, and Multiplex Networks. Science, 2010, 328, 876-878.	12.6	1,655
2	Dynamic reconfiguration of human brain networks during learning. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 7641-7646.	7.1	1,399
3	Mathematical Formulation of Multilayer Networks. Physical Review X, 2013, 3, .	8.9	513
4	Critical Truths About Power Laws. Science, 2012, 335, 665-666.	12.6	501
5	The physics of spreading processes in multilayerÂnetworks. Nature Physics, 2016, 12, 901-906.	16.7	430
6	Social structure of Facebook networks. Physica A: Statistical Mechanics and Its Applications, 2012, 391, 4165-4180.	2.6	420
7	Random walks and diffusion on networks. Physics Reports, 2017, 716-717, 1-58.	25.6	420
8	Robust detection of dynamic community structure in networks. Chaos, 2013, 23, 013142.	2.5	400
9	The multilayer nature of ecological networks. Nature Ecology and Evolution, 2017, 1, 101.	7.8	383
10	A roadmap for the computation of persistent homology. EPJ Data Science, 2017, 6, 17.	2.8	371
11	Comparing Community Structure to Characteristics in Online Collegiate Social Networks. SIAM Review, 2011, 53, 526-543.	9.5	315
12	Task-Based Core-Periphery Organization of Human Brain Dynamics. PLoS Computational Biology, 2013, 9, e1003171.	3.2	302
13	MuxViz: a tool for multilayer analysis and visualization of networks. Journal of Complex Networks, 2015, 3, 159-176.	1.8	271
14	Core-Periphery Structure in Networks. SIAM Journal on Applied Mathematics, 2014, 74, 167-190.	1.8	265
15	Differential Recruitment of the Sensorimotor Putamen and Frontoparietal Cortex during Motor Chunking in Humans. Neuron, 2012, 74, 936-946.	8.1	233
16	Discrete Breathers in One-Dimensional Diatomic Granular Crystals. Physical Review Letters, 2010, 104, 244302.	7.8	224
17	Limit order books. Quantitative Finance, 2013, 13, 1709-1742.	1.7	191
18	A network analysis of committees in the U.S. House of Representatives. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 7057-7062.	7.1	168

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19	Dynamical Systems on Networks. Frontiers in Applied Dynamical Systems: Reviews and Tutorials, 2016, , .	0.5	151
20	Community Detection in Temporal Multilayer Networks, with an Application to Correlation Networks. Multiscale Modeling and Simulation, 2016, 14, 1-41.	1.6	151
21	Revisiting Date and Party Hubs: Novel Approaches to Role Assignment in Protein Interaction Networks. PLoS Computational Biology, 2010, 6, e1000817.	3.2	128
22	Community structure in Congressional cosponsorship networks. Physica A: Statistical Mechanics and Its Applications, 2008, 387, 1705-1712.	2.6	125
23	Eigenvector-Based Centrality Measures for Temporal Networks. Multiscale Modeling and Simulation, 2017, 15, 537-574.	1.6	120
24	Dissipative Solitary Waves in Granular Crystals. Physical Review Letters, 2009, 102, 024102.	7.8	116
25	The use of multilayer network analysis in animal behaviour. Animal Behaviour, 2019, 149, 7-22.	1.9	116
26	Accuracy of mean-field theory for dynamics on real-world networks. Physical Review E, 2012, 85, 026106.	2.1	113
27	Network analysis of particles and grains. Journal of Complex Networks, 2018, 6, 485-565.	1.8	113
28	Optimal Design of Composite Granular Protectors. Mechanics of Advanced Materials and Structures, 2009, 17, 1-19.	2.6	112
29	The unreasonable effectiveness of tree-based theory for networks with clustering. Physical Review E, 2011, 83, 036112.	2.1	111
30	Highly nonlinear solitary waves in heterogeneous periodic granular media. Physica D: Nonlinear Phenomena, 2009, 238, 666-676.	2.8	105
31	Highly nonlinear solitary waves in periodic dimer granular chains. Physical Review E, 2008, 77, 015601.	2.1	103
32	Granular crystals: Nonlinear dynamics meets materials engineering. Physics Today, 2015, 68, 44-50.	0.3	101
33	Influence of network topology on sound propagation in granular materials. Physical Review E, 2012, 86, 041306.	2.1	100
34	Extraction of force-chain network architecture in granular materials using community detection. Soft Matter, 2015, 11, 2731-2744.	2.7	98
35	Core-Periphery Structure in Networks (Revisited). SIAM Review, 2017, 59, 619-646.	9.5	96
36	Multi-stage complex contagions. Chaos, 2013, 23, 013124.	2.5	94

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37	Topological data analysis of contagion maps for examining spreading processes on networks. Nature Communications, 2015, 6, 7723.	12.8	90
38	Think locally, act locally: Detection of small, medium-sized, and large communities in large networks. Physical Review E, 2015, 91, 012821.	2.1	88
39	Motor primitives in space and time via targeted gain modulation in cortical networks. Nature Neuroscience, 2018, 21, 1774-1783.	14.8	87
40	Localized breathing modes in granular crystals with defects. Physical Review E, 2009, 80, 066601.	2.1	85
41	Taxonomies of networks from community structure. Physical Review E, 2012, 86, 036104-36104.	2.1	79
42	Community structure in the United States House of Representatives. Physica A: Statistical Mechanics and Its Applications, 2007, 386, 414-438.	2.6	78
43	A simple generative model of collective online behavior. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 10411-10415.	7.1	78
44	Intrinsic energy localization through discrete gap breathers in one-dimensional diatomic granular crystals. Physical Review E, 2010, 82, 056604.	2.1	77
45	Persistent homology of time-dependent functional networks constructed from coupled time series. Chaos, 2017, 27, 047410.	2.5	73
46	Generalized master equations for non-Poisson dynamics on networks. Physical Review E, 2012, 86, 046102.	2.1	68
47	Cross-linked structure of network evolution. Chaos, 2014, 24, 013112.	2.5	68
48	Nonlinear coherent structures in granular crystals. Journal of Physics Condensed Matter, 2017, 29, 413003.	1.8	64
49	Random Walker Ranking for NCAA Division I-A Football. American Mathematical Monthly, 2007, 114, 761-777.	0.3	63
50	Can Multilayer Networks Advance Animal Behavior Research?. Trends in Ecology and Evolution, 2018, 33, 376-378.	8.7	62
51	Dynamic network centrality summarizes learning in the human brain. Journal of Complex Networks, 2013, 1, 83-92.	1.8	60
52	Fermi, Pasta, Ulam and the Birth of Experimental Mathematics. American Scientist, 2009, 97, 214.	0.1	57
53	Null models for community detection in spatially embedded, temporal networks. Journal of Complex Networks, 2016, 4, 363-406.	1.8	56
54	Frequency-based brain networks: From a multiplex framework to a full multilayer description. Network Neuroscience, 2018, 2, 418-441.	2.6	56

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55	Detection of coreâ€“periphery structure in networks using spectral methods and geodesic paths. European Journal of Applied Mathematics, 2016, 27, 846-887.	2.9	54
56	Nonlinear waves in disordered diatomic granular chains. Physical Review E, 2010, 82, 021301.	2.1	51
57	Dynamical clustering of exchange rates. Quantitative Finance, 2012, 12, 1493-1520.	1.7	50
58	Communities in multislice voting networks. Chaos, 2010, 20, 041108.	2.5	48
59	Lost in transportation: Information measures and cognitive limits in multilayer navigation. Science Advances, 2016, 2, e1500445.	10.3	48
60	Community structure in the United Nations General Assembly. Physica A: Statistical Mechanics and Its Applications, 2012, 391, 343-361.	2.6	47
61	Modulated amplitude waves in collisionally inhomogeneous Boseâ€“Einstein condensates. Physica D: Nonlinear Phenomena, 2007, 229, 104-115.	2.8	45
62	Matter-wave solitons with a periodic, piecewise-constant scattering length. Physical Review A, 2008, 78, .	2.5	45
63	Density-based and transport-based core-periphery structures in networks. Physical Review E, 2014, 89, 032810.	2.1	43
64	The Extraordinary SVD. American Mathematical Monthly, 2012, 119, 838.	0.3	42
65	A local perspective on community structure in multilayer networks. Network Science, 2017, 5, 144-163.	1.0	42
66	Numerical methods for the computation of the confluent and Gauss hypergeometric functions. Numerical Algorithms, 2017, 74, 821-866.	1.9	40
67	Nonlinear lattice dynamics of Boseâ€“Einstein condensates. Chaos, 2005, 15, 015115.	2.5	38
68	Modulational Instability in a Layered Kerr Medium: Theory and Experiment. Physical Review Letters, 2006, 97, 234101.	7.8	38
69	Estimating interevent time distributions from finite observation periods in communication networks. Physical Review E, 2015, 92, 052813.	2.1	37
70	Mathematical models of bipolar disorder. Communications in Nonlinear Science and Numerical Simulation, 2009, 14, 2897-2908.	3.3	36
71	Opinion formation and distribution in a bounded-confidence model on various networks. Physical Review E, 2018, 97, 022312.	2.1	36
72	Prey Switching with a Linear Preference Trade-Off. SIAM Journal on Applied Dynamical Systems, 2014, 13, 658-682.	1.6	35

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73	Neither global nor local: Heterogeneous connectivity in spatial network structures of world migration. Social Networks, 2018, 53, 4-19.	2.1	35
74	A model for the influence of media on the ideology of content in online social networks. Physical Review Research, 2020, 2, .	3.6	34
75	Small-world network. Scholarpedia Journal, 2012, 7, 1739.	0.3	34
76	Dynamics and manipulation of matter-wave solitons in optical superlattices. Physics Letters, Section A: General, Atomic and Solid State Physics, 2006, 352, 210-215.	2.1	30
77	Dynamics on modular networks with heterogeneous correlations. Chaos, 2014, 24, 023106.	2.5	30
78	A Method Based on Total Variation for Network Modularity Optimization Using the MBO Scheme. SIAM Journal on Applied Mathematics, 2013, 73, 2224-2246.	1.8	29
79	Superdiffusive transport and energy localization in disordered granular crystals. Physical Review E, 2016, 93, 022902.	2.1	28
80	Topological data analysis of continuum percolation with disks. Physical Review E, 2018, 98, 012318.	2.1	28
81	Social network analysis for social neuroscientists. Social Cognitive and Affective Neuroscience, 2021, 16, 883-901.	3.0	28
82	Mutually-antagonistic interactions in baseball networks. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 1131-1141.	2.6	27
83	A multilayer network model of the coevolution of the spread of a disease and competing opinions. Mathematical Models and Methods in Applied Sciences, 2021, 31, 2455-2494.	3.3	27
84	Resonant and non-resonant modulated amplitude waves for binary Boseâ€“Einstein condensates in optical lattices. Physica D: Nonlinear Phenomena, 2004, 196, 106-123.	2.8	26
85	Multivariate Spatiotemporal Hawkes Processes and Network Reconstruction. SIAM Journal on Mathematics of Data Science, 2019, 1, 356-382.	1.8	26
86	Spatial applications of topological data analysis: Cities, snowflakes, random structures, and spiders spinning under the influence. Physical Review Research, 2020, 2, .	3.6	24
87	Hipsters on networks: How a minority group of individuals can lead to an antiestablishment majority. Physical Review E, 2019, 99, 022313.	2.1	23
88	A framework for the construction of generative models for mesoscale structure in multilayer networks. Physical Review Research, 2020, 2, .	3.6	23
89	Modulated amplitude waves in Bose-Einstein condensates. Physical Review E, 2004, 69, 047201.	2.1	22
90	Nanoptera in a Period-2 Toda Chain. SIAM Journal on Applied Dynamical Systems, 2018, 17, 1182-1212.	1.6	22

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91	Tunable Eigenvector-Based Centralities for Multiplex and Temporal Networks. Multiscale Modeling and Simulation, 2021, 19, 113-147.	1.6	22
92	Forecasting failure locations in 2-dimensional disordered lattices. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 16742-16749.	7.1	21
93	Nonlinearity + Networks: A 2020 Vision. Advances in Dynamics, Patterns, Cognition, 2020, , 131-159.	0.3	21
94	Competition for popularity in bipartite networks. Chaos, 2010, 20, 043101.	2.5	20
95	A mathematical model for the dynamics and synchronization of cows. Physica D: Nonlinear Phenomena, 2011, 240, 1497-1509.	2.8	20
96	Direct measurement of superdiffusive energy transport in disordered granular chains. Nature Communications, 2018, 9, 640.	12.8	20
97	In-degree centrality in a social network is linked to coordinated neural activity. Nature Communications, 2022, 13, 1118.	12.8	20
98	Bose-Einstein Condensates in Superlattices. SIAM Journal on Applied Dynamical Systems, 2005, 4, 783-807.	1.6	19
99	Scattering of waves by impurities in precompressed granular chains. Physical Review E, 2016, 93, 052224.	2.1	19
100	Mathematical genealogy and department prestige. Chaos, 2011, 21, 041104.	2.5	18
101	A Predator–2 Prey Fast--Slow Dynamical System for Rapid Predator Evolution. SIAM Journal on Applied Dynamical Systems, 2017, 16, 54-90.	1.6	17
102	Nonlinear excitations in magnetic lattices with long-range interactions. New Journal of Physics, 2019, 21, 063032.	2.9	17
103	Persistent Homology of Geospatial Data: A Case Study with Voting. SIAM Review, 2021, 63, 67-99.	9.5	17
104	Topological data analysis of task-based fMRI data from experiments on schizophrenia. Journal of Physics Complexity, 2021, 2, 035006.	2.2	17
105	Quasiperiodic Dynamics in Bose-Einstein Condensates in Periodic Lattices and Superlattices. Journal of Nonlinear Science, 2007, 17, 59-83.	2.1	16
106	What are essential concepts about networks?. Journal of Complex Networks, 2016, 4, 457-474.	1.8	16
107	Relating Modularity Maximization and Stochastic Block Models in Multilayer Networks. SIAM Journal on Mathematics of Data Science, 2019, 1, 667-698.	1.8	16
108	What Is... a Multilayer Network?. Notices of the American Mathematical Society, 2018, 65, 1.	0.2	16

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109	A perturbative analysis of modulated amplitude waves in Boseâ€“Einstein condensates. Chaos, 2004, 14, 739-755.	2.5	15
110	Quasiperiodic granular chains and Hofstadter butterflies. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170139.	3.4	15
111	Synergistic effects in threshold models on networks. Chaos, 2018, 28, 013115.	2.5	14
112	Isomorphisms in Multilayer Networks. IEEE Transactions on Network Science and Engineering, 2018, 5, 198-211.	6.4	14
113	Layer Communities in Multiplex Networks. Journal of Statistical Physics, 2018, 173, 1286-1302.	1.2	14
114	Forecasting Elections Using Compartmental Models of Infection. SIAM Review, 2020, 62, 837-865.	9.5	14
115	Commentary: Teach network science to teenagers. Network Science, 2013, 1, 226-247.	1.0	13
116	Mean-field approach to evolving spatial networks, with an application to osteocyte network formation. Physical Review E, 2017, 96, 012301.	2.1	13
117	Complex contagions with timers. Chaos, 2018, 28, 033101.	2.5	13
118	A Bounded-Confidence Model of Opinion Dynamics on Hypergraphs. SIAM Journal on Applied Dynamical Systems, 2022, 21, 1-32.	1.6	13
119	Effect of antipsychotics on community structure in functional brain networks. Journal of Complex Networks, 2019, 7, 932-960.	1.8	12
120	Nonlinear localized modes in two-dimensional hexagonally-packed magnetic lattices. New Journal of Physics, 2021, 23, 043008.	2.9	12
121	Mesoscale analyses of fungal networks as an approach for quantifying phenotypic traits. Journal of Complex Networks, 2016, , cnv034.	1.8	11
122	Dominance, sharing, and assessment in an iterated Hawkâ€“Dove game. Journal of Theoretical Biology, 2020, 493, 110101.	1.7	10
123	Nonadiabatic dynamics in semiquantal physics. Reports on Progress in Physics, 2001, 64, 1165-1189.	20.1	9
124	Matchmaker, Matchmaker, Make Me a Match: Migration of Populations via Marriages in the Past. Physical Review X, 2014, 4, .	8.9	9
125	Customer mobility and congestion in supermarkets. Physical Review E, 2019, 100, 062304.	2.1	9
126	Motifs for Processes on Networks. SIAM Journal on Applied Dynamical Systems, 2021, 20, 2516-2557.	1.6	9

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127	Dark solitary waves in a class of collisionally inhomogeneous Bose-Einstein condensates. Physical Review A, 2013, 87, .	2.5	8
128	Tie-Decay Networks in Continuous Time and Eigenvector-Based Centralities. IEEE Transactions on Network Science and Engineering, 2021, 8, 1759-1771.	6.4	8
129	Fitting in and breaking up: A nonlinear version of coevolving voter models. Physical Review E, 2020, 101, 062303.	2.1	7
130	Classical and Quantum Random-Walk Centrality Measures in Multilayer Networks. SIAM Journal on Applied Mathematics, 2021, 81, 2704-2724.	1.8	7
131	VIBRATING QUANTUM BILLIARDS ON RIEMANNIAN MANIFOLDS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2001, 11, 2305-2315.	1.7	6
132	SPATIAL RESONANCE OVERLAP IN BOSEâ€“EINSTEIN CONDENSATES IN SUPERLATTICE POTENTIALS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2006, 16, 945-959.	1.7	6
133	Averaging of nonlinearity management with dissipation. Physical Review A, 2008, 78, .	2.5	6
134	BIFURCATIONS IN ONE DEGREE-OF-VIBRATION QUANTUM BILLIARDS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2001, 11, 903-911.	1.7	5
135	Multislice Modularity Optimization in Community Detection and Image Segmentation. , 2012, , .		5
136	Network analysis and modelling: Special issue ofEuropean Journal of Applied Mathematics. European Journal of Applied Mathematics, 2016, 27, 807-811.	2.9	5
137	Quasi-centralized limit order books. Quantitative Finance, 2017, 17, 831-853.	1.7	5
138	Random-graph models and characterization of granular networks. Journal of Complex Networks, 2021, 8, .	1.8	5
139	Inference of edge correlations in multilayer networks. Physical Review E, 2020, 102, 062307.	2.1	5
140	Nanoptera in Weakly Nonlinear Woodpile Chains and Diatomic Granular Chains. SIAM Journal on Applied Dynamical Systems, 2021, 20, 2412-2449.	1.6	5
141	Modeling the lowest-cost splitting of a herd of cows by optimizing a cost function. Chaos, 2017, 27, 063114.	2.5	4
142	Inferring parameters of prey switching in a 1 predatorâ€“2 prey plankton system with a linear preference tradeoff. Journal of Theoretical Biology, 2018, 456, 108-122.	1.7	4
143	FemaleDrosophila melanogasterrespond to song-amplitude modulations. Biology Open, 2018, 7, .	1.2	3
144	Stochastic Block Models are a Discrete Surface Tension. Journal of Nonlinear Science, 2020, 30, 2429-2462.	2.1	3

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145	Opinion dynamics on tie-decay networks. Physical Review Research, 2021, 3, .	3.6	3
146	Chaos on the Quantum Scale. American Scientist, 2001, 89, 532.	0.1	3
147	Topological Data Analysis of Spatial Systems. Understanding Complex Systems, 2022, , 389-399.	0.6	3
148	Networks of necessity: Simulating COVID-19 mitigation strategies for disabled people and their caregivers. PLoS Computational Biology, 2022, 18, e1010042.	3.2	3
149	QUANTUM CHAOS FOR THE VIBRATING RECTANGULAR BILLIARD. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2001, 11, 2317-2337.	1.7	2
150	Energy absorption and dissipation in quantum systems. Physica D: Nonlinear Phenomena, 2004, 195, 398-402.	2.8	2
151	Geosocial Graph-Based Community Detection. , 2012, , .		2
152	Convergence Time towards Periodic Orbits in Discrete Dynamical Systems. PLoS ONE, 2014, 9, e92652.	2.5	2
153	Pull out all the stops: Textual analysis via punctuation sequences. European Journal of Applied Mathematics, 2021, 32, 1069-1105.	2.9	2
154	Spatial strength centrality and the effect of spatial embeddings on network architecture. Physical Review E, 2020, 101, 062305.	2.1	2
155	Models of continuous-time networks with tie decay, diffusion, and convection. Physical Review E, 2021, 103, 022304.	2.1	2
156	Prime Quasientropy and Quasichaos. International Journal of Theoretical Physics, 2002, 41, 1389-1395.	1.2	1
157	Comment on â€œBifurcation analysis of parametrically excited bipolar disorder modelâ€• Communications in Nonlinear Science and Numerical Simulation, 2009, 14, 2844.	3.3	1
158	Heterogeneous, weakly coupled map lattices. Communications in Nonlinear Science and Numerical Simulation, 2016, 36, 549-563.	3.3	1
159	Connecting the Dots: Discovering the â€œShapeâ€•of Data. Frontiers for Young Minds, 0, 9, .	0.8	1
160	Detection of functional communities in networks of randomly coupled oscillators using the dynamic-mode decomposition. Physical Review E, 2021, 104, 044305.	2.1	1
161	Role detection in bicycle-sharing networks using multilayer stochastic block models. Network Science, 2022, 10, 46-81.	1.0	1
162	Remarks on whale cultures from a complex systems perspective. Behavioral and Brain Sciences, 2001, 24, 344-344.	0.7	0

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163	A GalÃ«rkin approach to electronic near-degeneracies in molecular systems. Physica D: Nonlinear Phenomena, 2002, 167, 218-247.	2.8	0
164	Epidemic thresholds of infectious diseases on tie-decay networks. Journal of Complex Networks, 2021, 10, .	1.8	0
165	Counterparty Credit Limits: The Impact of a Risk-Mitigation Measure on Everyday Trading. Applied Mathematical Finance, 2020, 27, 520-548.	1.2	0