Petter Holme

List of Publications by Year
in descending order

165 papers	12,426 citations	50170 46 h-index	24915 109 g-index
167 all docs	167 docs citations	167 times ranked	8375 citing authors

#	Article	IF	Citations
1	Temporal networks. Physics Reports, 2012, 519, 97-125.	10.3	2,023
2	Attack vulnerability of complex networks. Physical Review E, 2002, 65, 056109.	0.8	1,365
3	Growing scale-free networks with tunable clustering. Physical Review E, 2002, 65, 026107.	0.8	728
4	Vertex similarity in networks. Physical Review E, 2006, 73, 026120.	0.8	685
5	Modern temporal network theory: a colloquium. European Physical Journal B, 2015, 88, 1.	0.6	480
6	Nonequilibrium phase transition in the coevolution of networks and opinions. Physical Review E, 2006, 74, 056108.	0.8	435
7	Predictability of population displacement after the 2010 Haiti earthquake. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 11576-11581.	3.3	428
8	Subnetwork hierarchies of biochemical pathways. Bioinformatics, 2003, 19, 532-538.	1.8	294
9	Simulated Epidemics in an Empirical Spatiotemporal Network of 50,185 Sexual Contacts. PLoS Computational Biology, 2011, 7, e1001109.	1.5	256
10	Social physics. Physics Reports, 2022, 948, 1-148.	10.3	231
11	Structure and time evolution of an Internet dating community. Social Networks, 2004, 26, 155-174.	1.3	225
12	Vertex overload breakdown in evolving networks. Physical Review E, 2002, 65, 066109.	0.8	219
13	Dynamic instabilities induced by asymmetric influence: Prisonersâ€™ dilemma game in small-world networks. Physical Review E, 2002, 66, 021907.	0.8	195
14	Core-periphery organization of complex networks. Physical Review E, 2005, 72, 046111.	0.8	171
15	CONGESTION AND CENTRALITY IN TRAFFIC FLOW ON COMPLEX NETWORKS. International Journal of Modeling, Simulation, and Scientific Computing, 2003, 06, 163-176.	0.9	169
16	Network reachability of real-world contact sequences. Physical Review E, 2005, 71, 046119.	0.8	166
17	Information dynamics shape the sexual networks of Internet-mediated prostitution. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 5706-5711.	3.3	165
18	Predicting and controlling infectious disease epidemics using temporal networks. F1000prime Reports, 2013, 5, 6.	5.9	149

#	Article	IF	Citations
19	Role of activity in human dynamics. Europhysics Letters, 2008, 82, 28002.	0.7	147
20	Edge overload breakdown in evolving networks. Physical Review E, 2002, 66, 036119.	0.8	136
21	Efficient local strategies for vaccination and network attack. Europhysics Letters, 2004, 68, 908-914.	0.7	132
22	Network Properties of Complex Human Disease Genes Identified through Genome-Wide Association Studies. PLoS ONE, 2009, 4, e8090.	1.1	114
23	XYmodel in small-world networks. Physical Review E, 2001, 64, 056135.	0.8	108
24	Network bipartivity. Physical Review E, 2003, 68, 056107.	0.8	107
25	Rare and everywhere: Perspectives on scale-free networks. Nature Communications, 2019, 10, 1016.	5.8	104
26	Korean university life in a network perspective: Dynamics of a large affiliation network. Physica A: Statistical Mechanics and Its Applications, 2007, 373, 821-830.	1.2	101
27	Diversity of reproduction time scale promotes cooperation in spatial prisonerâ€™s dilemma games. Physical Review E, 2009, 80, 036106.	0.8	100
28	Emergent Hierarchical Structures in Multiadaptive Games. Physical Review Letters, 2011, 106, 028702.	2.9	100
29	Threshold model of cascades in empirical temporal networks. Physica A: Statistical Mechanics and Its Applications, 2013, 392, 3476-3483.	1.2	93
30	Prisonersâ€™ dilemma in real-world acquaintance networks: Spikes and quasiequilibria induced by the interplay between structure and dynamics. Physical Review E, 2003, 68, 030901.	0.8	92
31	Bursty Communication Patterns Facilitate Spreading in a Threshold-Based Epidemic Dynamics. PLoS ONE, 2013, 8, e68629.	1.1	88
32	Exploiting Temporal Network Structures of Human Interaction to Effectively Immunize Populations. PLoS ONE, 2012, 7, e36439.	1.1	87
33	Onion structure and network robustness. Physical Review E, 2011, 84, 026106.	0.8	80
34	Prediction of Links and Weights in Networks by Reliable Routes. Scientific Reports, 2015, 5, 12261.	1.6	79
35	Currency and commodity metabolites: their identification and relation to the modularity of metabolic networks. IET Systems Biology, 2007, 1, 280-285.	0.8	76
36	Birth and death of links control disease spreading in empirical contact networks. Scientific Reports, 2014, 4, 4999.	1.6	71

#	Article	IF	Citations
37	Ranking Candidate Disease Genes from Gene Expression and Protein Interaction: A Katz-Centrality Based Approach. PLoS ONE, 2011, 6, e24306.	1.1	70
38	Solving the Dynamic Correlation Problem of the Susceptible-Infected-Susceptible Model on Networks. Physical Review Letters, 2016, 116, 258301.	2.9	67
39	Dynamics of Networking Agents Competing for High Centrality and Low Degree. Physical Review Letters, 2006, 96, 098701.	2.9	63
40	The Basic Reproduction Number as a Predictor for Epidemic Outbreaks in Temporal Networks. PLoS ONE, 2015, 10, e0120567.	1.1	62
41	Epidemiologically Optimal Static Networks from Temporal Network Data. PLoS Computational Biology, 2013, 9, e1003142.	1.5	60
42	Exploring the assortativity-clustering space of a networkâ€™s degree sequence. Physical Review E, 2007, 75, 046111.	0.8	58
43	Effects of strategy-migration direction and noise in the evolutionary spatial prisonerâ€™s dilemma. Physical Review E, 2009, 80, 026108.	0.8	57
44	Network dynamics of ongoing social relationships. Europhysics Letters, 2003, 64, 427-433.	0.7	56
45	Temporal network structures controlling disease spreading. Physical Review E, 2016, 94, 022305.	0.8	53
46	Dynamic critical behavior of theXYmodel in small-world networks. Physical Review E, 2003, 67, 036118.	0.8	50
47	Heterogeneous cooperative leadership structure emerging from random regular graphs. Chaos, 2019, 29, 103103.	1.0	48
48	Morphology of travel routes and the organization of cities. Nature Communications, 2017, 8, 2229.	5.8	47
49	Networking the seceder model: Group formation in social and economic systems. Physical Review E, 2004, 70, 036108.	0.8	42
50	Majority-vote model on hyperbolic lattices. Physical Review E, 2010, 81, 011133.	0.8	41
51	Detecting sequences of system states in temporal networks. Scientific Reports, 2019, 9, 795.	1.6	41
52	Modeling scientific-citation patterns and other triangle-rich acyclic networks. Physical Review E, 2009, 80, 037101.	0.8	40
53	Metabolic Robustness and Network Modularity: A Model Study. PLoS ONE, 2011, 6, e16605.	1.1	40
54	Three faces of node importance in network epidemiology: Exact results for small graphs. Physical Review E, 2017, 96, 062305.	0.8	38

#	Article	IF	Citations
55	The Network Organization of Cancer-associated Protein Complexes in Human Tissues. Scientific Reports, 2013, 3, 1583.	1.6	37
56	Agentâ€based model approach to optimal foraging in heterogeneous landscapes: effects of patch clumpiness. Ecography, 2007, 30, 777-788.	2.1	36
57	Relating Land Use and Human Intra-City Mobility. PLoS ONE, 2015, 10, e0140152.	1.1	36
58	Attractiveness and activity in Internet communities. Physica A: Statistical Mechanics and Its Applications, 2006, 364, 603-609.	1.2	35
59	Role-similarity based functional prediction in networked systems: application to the yeast proteome. Journal of the Royal Society Interface, 2005, 2, 327-333.	1.5	33
60	Trade-offs between robustness and small-world effect in complex networks. Scientific Reports, 2016, 6, 37317.	1.6	33
61	Exploring Maps with Greedy Navigators. Physical Review Letters, 2012, 108, 128701.	2.9	32
62	Analyzing Temporal Networks in Social Media. Proceedings of the IEEE, 2014, 102, 1922-1933.	16.4	32
63	Mobility in China, 2020: a tale of four phases. National Science Review, 2021, 8, nwab148.	4.6	31
64	The Contact Network of Inpatients in a Regional Healthcare System. A Longitudinal Case Study. Mathematical Population Studies, 2007, 14, 269-284.	0.8	29
65	Exit rights open complex pathways to cooperation. Journal of the Royal Society Interface, 2021, 18, 20200777.	1.5	29
66	Community consistency determines the stability transition window of power-grid nodes. New Journal of Physics, 2015, 17, 113005.	1.2	28
67	Exploring temporal networks with greedy walks. European Physical Journal B, 2015, 88, 1.	0.6	27
68	Sampling of temporal networks: Methods and biases. Physical Review E, 2017, 96, 052302.	0.8	27
69	Connectivity of diagnostic technologies: improving surveillance and accelerating tuberculosis elimination. International Journal of Tuberculosis and Lung Disease, 2016, 20, 999-1003.	0.6	26
70	An integrated model of traffic, geography and economy in the internet. Computer Communication Review, 2008, 38, 5-16.	1.5	25
71	Optimizing sentinel surveillance in temporal network epidemiology. Scientific Reports, 2017, 7, 4804.	1.6	25
72	Cost-efficient vaccination protocols for network epidemiology. PLoS Computational Biology, 2017, 13, e1005696.	1.5	25

#	Article	IF	Citations
73	Model validation of simple-graph representations of metabolism. Journal of the Royal Society Interface, 2009, 6, 1027-1034.	1.5	22
74	Structural differences between open and direct communication in an online community. Physica A: Statistical Mechanics and Its Applications, 2014, 414, 263-273.	1.2	22
75	Building blocks of the basin stability of power grids. Physical Review E, 2016, 93, 062318.	0.8	22
76	A NETWORK-BASED THRESHOLD MODEL FOR THE SPREADING OF FADS IN SOCIETY AND MARKETS. International Journal of Modeling, Simulation, and Scientific Computing, 2005, 08, 261-273.	0.9	21
77	Î² Cells Operate Collectively to Help Maintain Glucose Homeostasis. Biophysical Journal, 2020, 118, 2588-2595.	0.2	21
78	Susceptible-infected-spreading-based network embedding in static and temporal networks. EPJ Data Science, 2020, 9, .	1.5	21
79	Detecting degree symmetries in networks. Physical Review E, 2006, 74, 036107.	0.8	19
80	Information content of contact-pattern representations and predictability of epidemic outbreaks. Scientific Reports, 2015, 5, 14462.	1.6	19
81	Temporal Networks as a Modeling Framework. Understanding Complex Systems, 2013, , 1-14.	0.3	18
82	Extinction Times of Epidemic Outbreaks in Networks. PLoS ONE, 2013, 8, e84429.	1.1	18
83	Social contagion with degree-dependent thresholds. Physical Review E, 2017, 96, 012315.	0.8	17
84	Freedom of choice adds value to public goods. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 17516-17521.	3.3	17
85	Fast and principled simulations of the SIR model on temporal networks. PLoS ONE, 2021, 16, e0246961.	1.1	17
86	Small inter-event times govern epidemic spreading on networks. Physical Review Research, 2020, 2, .	1.3	16
87	Phase transitions in the two-dimensional random gaugeXYmodel. Physical Review B, 2003, 67, .	1.1	15
88	Ranking influential spreaders is an ill-defined problem. Europhysics Letters, 2017, 118, 68002.	0.7	14
89	Efficient sentinel surveillance strategies for preventing epidemics on networks. PLoS Computational Biology, 2019, 15, e1007517.	1.5	14
90	Atmospheric Reaction Systems as Null-Models to Identify Structural Traces of Evolution in Metabolism. PLoS ONE, 2011, 6, e19759.	1.1	13

#	Article	IF	Citations
91	Neutral theory of chemical reaction networks. New Journal of Physics, 2012, 14, 033032.	1.2	13
92	Epidemic extinction in networks: insights from the 12 110 smallest graphs. New Journal of Physics, 2018, 20, 113042.	1.2	13
93	Objective measures for sentinel surveillance in network epidemiology. Physical Review E, 2018, 98, 022313.	0.8	13
94	Universal evolution patterns of degree assortativity in social networks. Social Networks, 2020, 63, 47-55.	1.3	13
95	Concurrency measures in the era of temporal network epidemiology: a review. Journal of the Royal Society Interface, 2021, 18, 20210019.	1.5	13
96	Fat-Tailed Fluctuations in the Size of Organizations: The Role of Social Influence. PLoS ONE, 2014, 9, e100527.	1.1	12
97	Impact of perception models on friendship paradox and opinion formation. Physical Review E, 2019, 99, 052302.	0.8	12
98	Beyond ranking nodes: Predicting epidemic outbreak sizes by network centralities. PLoS Computational Biology, 2020, 16, e1008052.	1.5	12
99	Optimal control of networked reactionâ€“diffusion systems. Journal of the Royal Society Interface, 2022, 19, 20210739.	1.5	12
100	A greedy-navigator approach to navigable city plans. European Physical Journal: Special Topics, 2013, 215, 135-144.	1.2	11
101	Simulating Irrational Human Behavior to Prevent Resource Depletion. PLoS ONE, 2015, 10, e0117612.	1.1	11
102	Mechanistic models in computational social science. Frontiers in Physics, 2015, 3, .	1.0	11
103	Time evolution of predictability of epidemics on networks. Physical Review E, 2015, 91, 042811.	0.8	11
104	Autopoietic Influence Hierarchies in Pancreatic <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î²</mml:mi></mml:math> Cells. Physical Review Letters, 2021, 127, 168101.	2.9	11
105	A Map of Approaches to Temporal Networks. Computational Social Sciences, 2019, , 1-24.	0.4	10
106	Substance graphs are optimal simple-graph representations of metabolism. Science Bulletin, 2010, 55, 3161-3168.	1.7	9
107	Insights into the pathogenesis of axial spondyloarthropathy from network and pathway analysis. BMC Systems Biology, 2012, 6, S4.	3.0	9
108	Network Theory Integrated Life Cycle Assessment for an Electric Power System. Sustainability, 2015, 7, 10961-10975.	1.6	9

#	Article	IF	Citations
109	Modeling the dynamics of dissent. Physica A: Statistical Mechanics and Its Applications, 2017, 486, 262-272.	1.2	9
110	Building surrogate temporal network data from observed backbones. Physical Review E, 2021, 103, 052304.	0.8	9
111	Local interaction scale controls the existence of a nontrivial optimal critical mass in opinion spreading. Physical Review E, 2010, 82, 022102.	0.8	8
112	Phase-shift inversion in oscillator systems with periodically switching couplings. Physical Review E, 2012, 85, 027202.	0.8	8
113	A game-theoretic approach to optimize ad hoc networks inspired by small-world network topology. Physica A: Statistical Mechanics and Its Applications, 2018, 494, 129-139.	1.2	8
114	Impact of misinformation in temporal network epidemiology. Network Science, 2019, 7, 52-69.	0.8	8
115	The Diplomatâ€™s Dilemma: Maximal Power for Minimal Effort in Social Networks. Understanding Complex Systems, 2009, , 269-288.	0.3	8
116	A zero-temperature study of vortex mobility in two-dimensional vortex glass models. Europhysics Letters, 2002, 60, 439-445.	0.7	7
117	Radial structure of the Internet. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2007, 463, 1231-1246.	1.0	7
118	Scale-free networks with a large- to hypersmall-world transition. Physica A: Statistical Mechanics and Its Applications, 2007, 377, 315-322.	1.2	7
119	Emergence of Collective Memories. PLoS ONE, 2010, 5, e12522.	1.1	7
120	Cooperation, structure, and hierarchy in multiadaptive games. Physical Review E, 2011, 84, 061148.	0.8	7
121	The network positions of methicillin resistant Staphylococcus aureus affected units in a regional healthcare system. EPJ Data Science, 2014, 3, .	1.5	6
122	Shadows of the susceptible-infectious-susceptible immortality transition in small networks. Physical Review E, 2015, 92, 012804.	0.8	6
123	Navigating temporal networks. Physica A: Statistical Mechanics and Its Applications, 2019, 513, 288-296.	1.2	6
124	Dynamic scaling regimes of collective decision making. Europhysics Letters, 2008, 81, 28003.	0.7	5
125	Heterogeneous attachment strategies optimize the topology of dynamic wireless networks. European Physical Journal B, 2010, 73, 597-604.	0.6	5
126	Pathlength scaling in graphs with incomplete navigational information. Physica A: Statistical Mechanics and Its Applications, 2011, 390, 3996-4001.	1.2	5

#	Article	IF	Citations
127	Advantage of Being Multicomponent and Spatial: Multipartite Viruses Colonize Structured Populations with Lower Thresholds. Physical Review Letters, 2019, 123, 138101.	2.9	5
128	Temporal Networks. , 2014, , 2119-2129.		5
129	Transition in the two-dimensional step model: A Kosterlitz-Thouless transition in disguise. Physical Review B, 2001, 63, .	1.1	4
130	Understanding and Exploiting Information Spreading and Integrating Technologies. Journal of Computer Science and Technology, 2011, 26, 829-836.	0.9	4
131	Collective decision making with a mix of majority and minority seekers. Physical Review E, 2016, 93, 052308.	0.8	4
132	A fault-tolerant small world topology control model in ad hoc networks for search and rescue. Physics Letters, Section A: General, Atomic and Solid State Physics, 2018, 382, 467-476.	0.9	4
133	Flexible imitation suppresses epidemics through better vaccination. Journal of Computational Social Science, 2021, 4, 709-720.	1.4	4
134	A Temporal Network Version of Wattsâ€™s Cascade Model. Understanding Complex Systems, 2013, , 315-329.	0.3	4
135	Hiding in Temporal Networks. IEEE Transactions on Network Science and Engineering, 2022, 9, 1645-1657.	4.1	4
136	Comment on â€œRegularizing capacity of metabolic networksâ€. Physical Review E, 2008, 77, 023901; discussion 023902.	0.8	3
137	Signatures of Currency Vertices. Journal of the Physical Society of Japan, 2009, 78, 034801.	0.7	3
138	The network organisation of consumer complaints. Europhysics Letters, 2010, 91, 28005.	0.7	3
139	Geometric properties of graph layouts optimized for greedy navigation. Physical Review E, 2012, 86, 067103.	0.8	3
140	Impact of mobility structure on optimization of small-world networks of mobile agents. European Physical Journal B, 2016, 89, 1.	0.6	3
141	Sexual and Communication Networks of Internet-Mediated Prostitution. , 2016, , .		3
142	Introduction to Temporal Network Epidemiology. Theoretical Biology, 2017, , 1-16.	0.0	3
143	Multistage onset of epidemics in heterogeneous networks. Physical Review E, 2021, 103, 032313.	0.8	3
144	Temporal Networks. , 2018, , 3053-3062.		3

#	Article	IF	Citations
145	Comment on â€œStructure and Phase Transition of Josephson Vortices in Anisotropic High-TcSuperconductorsâ€ Physical Review Letters, 2000, 85, 2651-2651.	2.9	2
146	Multiscaling in an<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>Y</mml:mi><mml:mi>X</mml:mi></mml:mrow></mml:math>model of networks. Physical Review E, 2009, 80, 036120.	0.8	2
147	Social, Sexual and Economic Networks of Prostitution. Leonardo, 2012, 45, 80-81.	0.2	2
148	Representations of human contact patterns and outbreak diversity in SIR epidemics. IFAC-PapersOnLine, 2015, 48, 127-131.	0.5	2
149	Connecting human behavior and infectious disease spreading. Physics of Life Reviews, 2015, 15, 47-48.	1.5	2
150	Expansion of cooperatively growing populations: Optimal migration rates and habitat network structures. Physical Review E, 2017, 95, 012306.	0.8	2
151	Who Is the Most Important Character in Frozen? What Networks Can Tell Us About the World. Frontiers for Young Minds, 2019, 7, .	0.8	2
152	Coupling the circadian rhythms of population movement and the immune system in infectious disease modeling. PLoS ONE, 2020, 15, e0234619.	1.1	2
153	The global migration network of sex-workers. Journal of Computational Social Science, 2022, 5, 969-985.	1.4	2
154	Optimizing COVID-19 surveillance using historical electronic health records of influenza infections. , 0, , .		2
155	Free and freer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>X</mml:mi><mml:mi>Y</mml:mi></mml:mrow></mml:m models. Physical Review E, 2020, 101, 032311.	0.8	1
156	Local Symmetries in Complex Networks. Journal of the Korean Physical Society, 2007, 50, 300.	0.3	1
157	Universality out of order. Nature Communications, 2022, 13, 2355.	5.8	1
158	Weighted network motifs as random walk patterns. New Journal of Physics, 2022, 24, 053056.	1.2	1
159	Pathogenesis of axial spondyloarthropathy in a network perspective. , 2011, , .		0
160	Network characteristics of individual pigments in cyanobacterial photosystem II core complexes. Journal of the Korean Physical Society, 2013, 63, 2255-2261.	0.3	0
161	The social, economic and sexual networks of prostitution. , 2014, , .		0
162	Sensitivity to Temporal and Topological Misinformation in Predictions of Epidemic Outbreaks. Theoretical Biology, 2017, , 43-55.	0.0	0

#	Article	IF	Citations
163	Probing Empirical Contact Networks by Simulation of Spreading Dynamics. Computational Social Sciences, 2018, , 109-124.	0.4	0
164	Temporal Networks. , 2018, , 1-10.		0
165	The microdynamics shaping the relationship between democracy and corruption. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2022, 478, 20210567.	1.0	0