Zoltan Toroczkai

List of Publications by Year
in descending order

92	7,153	94269 37	62479 80
papers	citations	h-index	g-index

97	97	97	6235
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Modelling disease outbreaks in realistic urban social networks. Nature, 2004, 429, 180-184.	13.7	1,685
2	A Weighted and Directed Interareal Connectivity Matrix for Macaque Cerebral Cortex. Cerebral Cortex, 2014, 24, 17-36.	1.6	711
3	Cortical High-Density Counterstream Architectures. Science, 2013, 342, 1238406.	6.0	468
4	A Predictive Network Model of Cerebral Cortical Connectivity Based on a Distance Rule. Neuron, 2013, 80, 184-197.	3.8	372
5	Weight Consistency Specifies Regularities of Macaque Cortical Networks. Cerebral Cortex, 2011, 21, 1254-1272.	1.6	316
6	Jamming is limited in scale-free systems. Nature, 2004, 428, 716-716.	13.7	204
7	The role of long-range connections on the specificity of the macaque interareal cortical network. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 5187-5192.	3.3	172
8	The Mouse Cortical Connectome, Characterized by an Ultra-Dense Cortical Graph, Maintains Specificity by Distinct Connectivity Profiles. Neuron, 2018, 97, 698-715.e10.	3.8	169
9	Spatial Embedding and Wiring Cost Constrain the Functional Layout of the Cortical Network of Rodents and Primates. PLoS Biology, 2016, 14, e1002512.	2.6	158
10	Quantifying randomness in real networks. Nature Communications, 2015, 6, 8627.	5.8	134
11	Suppressing Roughness of Virtual Times in Parallel Discrete-Event Simulations. Science, 2003, 299, 677-679.	6.0	125
12	Structural bottlenecks for communication in networks. Physical Review E, 2007, 75, 036105.	0.8	125
13	Complexity of the International Agro-Food Trade Network and Its Impact on Food Safety. PLoS ONE, 2012, 7, e37810.	1.1	125
14	Predicting commuter flows in spatial networks using a radiation model based on temporal ranges. Nature Communications, 2014, 5, 5347.	5.8	118
15	Chaotic flow: The physics of species coexistence. Proceedings of the National Academy of Sciences of the United States of America, 2000, 97, 13661-13665.	3.3	117
16	Efficient and Exact Sampling of Simple Graphs with Given Arbitrary Degree Sequence. PLoS ONE, 2010, 5, e10012.	1.1	115
17	Competition-Driven Network Dynamics: Emergence of a Scale-Free Leadership Structure and Collective Efficiency. Physical Review Letters, 2004, 92, 058701.	2.9	110
18	Advection of Active Particles in Open Chaotic Flows. Physical Review Letters, 1998, 80, 500-503.	2.9	95

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19	Optimization hardness as transient chaos in an analog approach to constraint satisfaction. Nature Physics, 2011, 7, 966-970.	6.5	82
20	From Massively Parallel Algorithms and Fluctuating Time Horizons to Nonequilibrium Surface Growth. Physical Review Letters, 2000, 84, 1351-1354.	2.9	77
21	Fractal boundaries in open hydrodynamical flows: Signatures of chaotic saddles. Physical Review E, 1995, 51, 4076-4088.	0.8	74
22	Proximity networks and epidemics. Physica A: Statistical Mechanics and Its Applications, 2007, 378, 68-75.	1.2	68
23	Chaotic advection, diffusion, and reactions in open flows. Chaos, 2000, 10, 89-98.	1.0	63
24	Selective Sensitivity of Open Chaotic Flows on Inertial Tracer Advection: Catching Particles with a Stick. Physical Review Letters, 2002, 89, 164501.	2.9	63
25	Congestion-gradient driven transport on complex networks. Physical Review E, 2006, 74, 046114.	0.8	53
26	Constructing and sampling directed graphs with given degree sequences. New Journal of Physics, 2012, 14, 023012.	1.2	52
27	Diffusive persistence and the â€œsign-timeâ€•distribution. Physical Review E, 1998, 58, R2685-R2688.	0.8	51
28	Chemical or biological activity in open chaotic flows. Physical Review E, 1999, 59, 5468-5481.	0.8	51
29	Spatial models of prebiotic evolution: soup before pizza?. Origins of Life and Evolution of Biospheres, 2003, 33, 319-355.	0.8	50
30	Centrality Scaling in Large Networks. Physical Review Letters, 2010, 105, 038701.	2.9	48
31	Epitaxial mounding in limited-mobility models of surface growth. Physical Review B, 2001, 64, .	1.1	45
32	Universality class of discrete solid-on-solid limited mobility nonequilibrium growth models for kinetic surface roughening. Physical Review E, 2002, 65, 036144.	0.8	44
33	Wada dye boundaries in open hydrodynamical flows. Physica A: Statistical Mechanics and Its Applications, 1997, 239, 235-243.	1.2	43
34	Degree-based graph construction. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 392001.	0.7	41
35	The Chaos Within Sudoku. Scientific Reports, 2012, 2, 725.	1.6	41
36	Why data coherence and quality is critical for understanding interareal cortical networks. NeuroImage, 2013, 80, 37-45.	2.1	40

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37	Competing populations in flows with chaotic mixing. Theoretical Population Biology, 2003, 63, 77-90.	0.5	39
38	Range-limited centrality measures in complex networks. Physical Review E, 2012, 85, 066103.	0.8	38
39	A model for resolving the plankton paradox: coexistence in open flows. Freshwater Biology, 2000, 45, 123-132.	1.2	37
40	Advective Coalescence in Chaotic Flows. Physical Review Letters, 2001, 87, 038301.	2.9	34
41	A multiscale cerebral neurochemical connectome of the rat brain. PLoS Biology, 2017, 15, e2002612.	2.6	34
42	Nanoscale Fluctuations at Solid Surfaces. Physics Today, 1999, 52, 24-28.	0.3	32
43	Introduction: Optimization in networks. Chaos, 2007, 17, 026101.	1.0	32
44	Sign-time distributions for interface growth. Physical Review E, 1999, 60, R1115-R1118.	0.8	31
45	Exact sampling of graphs with prescribed degree correlations. New Journal of Physics, 2015, 17, 083052.	1.2	31
46	Extremal-point densities of interface fluctuations. Physical Review E, 2000, 62, 276-294.	0.8	28
47	A Simple Havel–Hakimi Type Algorithm to Realize Graphical Degree Sequences of Directed Graphs. Electronic Journal of Combinatorics, 2010, 17, .	0.2	28
48	Non-universal mound formation in non-equilibrium surface growth. Surface Science, 2000, 457, L369-L375.	0.8	27
49	Finite-size effects on active chaotic advection. Physical Review E, 2002, 65, 026216.	0.8	26
50	A dyadic reciprocity index for repeated interaction networks. Network Science, 2013, 1, 31-48.	0.8	26
51	Gradient networks. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 155103.	0.7	25
52	A continuous-time MaxSAT solver with high analog performance. Nature Communications, 2018, 9, 4864.	5.8	25
53	Synchronization landscapes in small-world-connected computer networks. Physical Review E, 2006, 73, 066115.	0.8	24
54	Efficient Analog Circuits for Boolean Satisfiability. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2018, 26, 155-167.	2.1	23

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55	Reducing Degeneracy in Maximum Entropy Models of Networks. Physical Review Letters, 2015, 114, 158701.	2.9	22
56	Advection of finite-size particles in open flows. Physical Review E, 2003, 67, 036303.	0.8	21
57	Estimation of entropies and dimensions by nonlinear symbolic time series analysis. Chaos, 2003, 13, 444-456.	1.0	17
58	Extreme fluctuations in noisy task-completion landscapes on scale-free networks. Chaos, 2007, 17, 026104.	1.0	17
59	Pinning method of pulse confinement in optical fiber with random dispersion. Journal of the Optical Society of America B: Optical Physics, 2002, 19, 2538.	0.9	16
60	Network discovery by generalized random walks. Europhysics Letters, 2010, 92, 50008.	0.7	14
61	Stabilizing chaotic vortex trajectories: an example of high-dimensional control. Physics Letters, Section A: General, Atomic and Solid State Physics, 1996, 224, 85-92.	0.9	13
62	The Brownian Vacancy Driven Walk. International Journal of Modern Physics B, 1997, 11, 3343-3374.	1.0	13
63	Fractality, chaos, and reactions in imperfectly mixed open hydrodynamical flows. Physica A: Statistical Mechanics and Its Applications, 1999, 274, 120-131.	1.2	13
64	The Brain in Space. Research and Perspectives in Neurosciences, 2016, , 45-74.	0.4	13
65	Geometric method for stabilizing unstable periodic orbits. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 190, 71-78.	0.9	11
66	Brownian-vacancyâ€“mediated disordering dynamics. Europhysics Letters, 1997, 40, 281-286.	0.7	11
67	Universality in active chaos. Chaos, 2004, 14, 72-78.	1.0	11
68	A Decomposition Based Proof for Fast Mixing of a Markov Chain over Balanced Realizations of a Joint Degree Matrix. SIAM Journal on Discrete Mathematics, 2015, 29, 481-499.	0.4	11
69	Introduction: Active chaotic flow. Chaos, 2002, 12, 372-372.	1.0	10
70	Topological classification of binary trees using the Horton-Strahler index. Physical Review E, 2001, 65, 016130.	0.8	9
71	An Improved Model for Statistical Alignment. Lecture Notes in Computer Science, 2001, , 1-10.	1.0	9
72	A model for electrophoresis of polymers with impurities: Exact distribution for a steady state. Physics Letters, Section A: General, Atomic and Solid State Physics, 1996, 217, 97-103.	0.9	8

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73	Order-to-chaos transition in the hardness of random Boolean satisfiability problems. Physical Review E, 2016, 93, 052211.	0.8	8
74	Accelerating a continuous-time analog SAT solver using GPUs. Computer Physics Communications, 2020, 256, 107469.	3.0	7
75	Random walk with a hop-over site: a novel approach to tagged diffusion and its applications. Journal of Physics A, 1998, 31, 9667-9683.	1.6	6
76	Using relaxational dynamics to reduce network congestion. New Journal of Physics, 2008, 10, 093007.	1.2	6
77	Continuous-time neural networks without local traps for solving Boolean satisfiability. , 2012, , .		6
78	Degree-preserving network growth. Nature Physics, 2022, 18, 100-106.	6.5	6
79	Continuous extension of the geometric control method. Journal of Physics A, 1996, 29, 3545-3557.	1.6	4
80	Classification criterion for dynamical systems in intermittent chaos. Physical Review E, 1993, 48, 136-146.	0.8	3
81	Autocatalytic reactions of phase distributed active particles. Chaos, 2002, 12, 408-416.	1.0	3
82	Small-World Synchronized Computing Networks for Scalable Parallel Discrete-Event Simulations. Lecture Notes in Physics, 0, , 255-275.	0.3	3
83	Periodic one-dimensional hopping model with one mobile directional impurity. Journal of Statistical Physics, 1997, 87, 545-575.	0.5	2
84	New Classes of Degree Sequences with Fast Mixing Swap Markov Chain Sampling. Combinatorics Probability and Computing, 2018, 27, 186-207.	0.8	2
85	Comment on â€œExtremal-point densities of interface fluctuations in a quenched random mediumâ€• Physical Review E, 2001, 64, 048101.	0.8	1
86	A Generalized Kac Model as a Dynamical System. Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences, 1994, 49, 1212-1214.	0.7	0
87	Detecting Phase Transitions in Intermittent Systems by Using the Thermodynamical Formalism. Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences, 1994, 49, 1235-1237.	0.7	0
88	Kac model from a dynamical systemâ€™s point of view. Physical Review E, 1994, 49, 2026-2040.	0.8	0
89	Controlling symmetric vortex configurations. , 1997, , .		0
90	An analog SAT solver based on a deterministic dynamical system: (Invited paper). , 2017, , .		0

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91	Effects of Interagent Communications on the Collective. , 2004, , 185-198.		0
92	An algebraic Monte-Carlo algorithm for the partition adjacency matrix realization problem. Algebraic Statistics, 2021, 12, 115-124.	0.5	0