

Sergei S Maslov

List of Publications by Year in descending order

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124
papers

9,596
citations

71102

41
h-index

42399

92
g-index

159
all docs

159
docs citations

159
times ranked

10518
citing authors

#	ARTICLE	IF	CITATIONS
1	Specificity and Stability in Topology of Protein Networks. <i>Science</i> , 2002, 296, 910-913.	12.6	2,649
2	KBase: The United States Department of Energy Systems Biology Knowledgebase. <i>Nature Biotechnology</i> , 2018, 36, 566-569.	17.5	955
3	Avalanche dynamics in evolution, growth, and depinning models. <i>Physical Review E</i> , 1996, 53, 414-443.	2.1	467
4	Finding scientific gems with Google's PageRank algorithm. <i>Journal of Informetrics</i> , 2007, 1, 8-15.	2.9	365
5	Detection of topological patterns in complex networks: correlation profile of the internet. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2004, 333, 529-540.	2.6	265
6	Simple model of a limit order-driven market. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2000, 278, 571-578.	2.6	192
7	Understanding the Differences between Genome Sequences of Escherichia coli B Strains REL606 and BL21(DE3) and Comparison of the E. coli B and K-12 Genomes. <i>Journal of Molecular Biology</i> , 2009, 394, 653-680.	4.2	179
8	Ranking scientific publications using a model of network traffic. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2007, 2007, P06010-P06010.	2.3	168
9	Modularity and Extreme Edges of the Internet. <i>Physical Review Letters</i> , 2003, 90, 148701.	7.8	162
10	Binding properties and evolution of homodimers in protein-protein interaction networks. <i>Nucleic Acids Research</i> , 2005, 33, 3629-3635.	14.5	159
11	Price fluctuations from the order book perspective—empirical facts and a simple model. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2001, 299, 234-246.	2.6	130
12	Hierarchy Measures in Complex Networks. <i>Physical Review Letters</i> , 2004, 92, 178702.	7.8	107
13	Toolbox model of evolution of prokaryotic metabolic networks and their regulation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 9743-9748.	7.1	100
14	Constraints imposed by non-functional protein-protein interactions on gene expression and proteome size. <i>Molecular Systems Biology</i> , 2008, 4, 210.	7.2	99
15	Field Theory for a Model of Self-Organized Criticality. <i>Europhysics Letters</i> , 1994, 27, 97-102.	2.0	98
16	Avalanches and Noise in Evolution and Growth Models. <i>Physical Review Letters</i> , 1994, 73, 2162-2165.	7.8	96
17	Promise and Pitfalls of Extending Google's PageRank Algorithm to Citation Networks. <i>Journal of Neuroscience</i> , 2008, 28, 11103-11105.	3.6	94
18	Topology of protein interaction network shapes protein abundances and strengths of their functional and nonspecific interactions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 4258-4263.	7.1	94

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19	BaCu ₂ Si ₂ O ₇ : A quasi-one-dimensional S=1/2 antiferromagnetic chain system. <i>Physical Review B</i> , 1999, 60, 6601-6607.	3.2	92
20	Extracting Hidden Information from Knowledge Networks. <i>Physical Review Letters</i> , 2001, 87, 248701.	7.8	86
21	Field-Induced Commensurate-Incommensurate Phase Transition in a Dzyaloshinskii-Moriya Spiral Antiferromagnet. <i>Physical Review Letters</i> , 1997, 78, 4857-4860.	7.8	84
22	Predicting tumor cell line response to drug pairs with deep learning. <i>BMC Bioinformatics</i> , 2018, 19, 486.	2.6	84
23	Automatic pathway building in biological association networks. <i>BMC Bioinformatics</i> , 2006, 7, 171.	2.6	83
24	Population cycles and species diversity in dynamic Kill-the-Winner model of microbial ecosystems. <i>Scientific Reports</i> , 2017, 7, 39642.	3.3	80
25	Recombinant transfer in the basic genome of <i>Escherichia coli</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 9070-9075.	7.1	77
26	Propagation of large concentration changes in reversible protein-binding networks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 13655-13660.	7.1	76
27	Multiple stable states in microbial communities explained by the stable marriage problem. <i>ISME Journal</i> , 2018, 12, 2823-2834.	9.8	73
28	Dynamical optimization theory of a diversified portfolio. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1998, 253, 403-418.	2.6	67
29	Diversity, Stability, and Reproducibility in Stochastically Assembled Microbial Ecosystems. <i>Physical Review Letters</i> , 2018, 120, 158102.	7.8	65
30	Magnetic anisotropy and low-energy spin waves in the Dzyaloshinskii-Moriya spiral magnet Ba ₂ CuGe ₂ O ₇ . <i>Physical Review B</i> , 1999, 59, 11432-11444.	3.2	63
31	Well-temperate phage: optimal bet-hedging against local environmental collapses. <i>Scientific Reports</i> , 2015, 5, 10523.	3.3	63
32	Upstream plasticity and downstream robustness in evolution of molecular networks. <i>BMC Evolutionary Biology</i> , 2004, 4, 9.	3.2	62
33	Time-dependent heterogeneity leads to transient suppression of the COVID-19 epidemic, not herd immunity. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	57
34	Experimental Measurement of the Staggered Magnetization Curve for a Haldane Spin Chain. <i>Physical Review Letters</i> , 1998, 80, 3630-3633.	7.8	55
35	Energy Separation of Single-Particle and Continuum States in an S=1/2 Weakly Coupled Chains Antiferromagnet. <i>Physical Review Letters</i> , 2000, 85, 4799-4802.	7.8	53
36	Experimental Evidence for Kaplan-Shekhtman-Entin-Wohlman-Aharony Interactions in Ba ₂ CuGe ₂ O ₇ . <i>Physical Review Letters</i> , 1998, 81, 5410-5413.	7.8	52

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37	Optimal Investment Strategy for Risky Assets. International Journal of Theoretical and Applied Finance, 1998, 01, 377-387.	0.5	52
38	Transforming the Language of Life. , 2020, , .		50
39	Multistability and regime shifts in microbial communities explained by competition for essential nutrients. ELife, 2019, 8, .	6.0	48
40	Time Directed Avalanches in Invasion Models. Physical Review Letters, 1995, 74, 562-565.	7.8	47
41	Diffusion on complex networks: a way to probe their large-scale topological structures. Physica A: Statistical Mechanics and Its Applications, 2004, 336, 163-173.	2.6	47
42	Recombination-Driven Genome Evolution and Stability of Bacterial Species. Genetics, 2017, 207, 281-295.	2.9	47
43	Infrared Studies of the Onset of Conductivity in Ultrathin Pb Films. Physical Review Letters, 1999, 83, 4880-4883.	7.8	44
44	Coexistence of Haldane-gap excitations and long-range antiferromagnetic order in mixed-spin nickelates $R_2\text{BaNiO}_5$. Physical Review B, 1998, 57, 68-71.	3.2	43
45	Exactly Solved Model of Self-Organized Criticality. Physical Review Letters, 1995, 75, 1550-1553.	7.8	42
46	Measures of globalization based on cross-correlations of world financial indices. Physica A: Statistical Mechanics and Its Applications, 2001, 301, 397-406.	2.6	42
47	UV-Induced Mutagenesis in Escherichia coli SOS Response: A Quantitative Model. PLoS Computational Biology, 2007, 3, e41.	3.2	42
48	Evidence for a multi-level trophic organization of the human gut microbiome. PLoS Computational Biology, 2019, 15, e1007524.	3.2	42
49	The First Critical Field and Locking-Unlocking Phase Transition in Layered Superconductors. Europhysics Letters, 1991, 14, 591-595.	2.0	41
50	Magnetic ordering, spin waves, and Haldane-gap excitations in $(\text{Nd}_{1-x}\text{Y}_x)_2\text{BaNiO}_5$ linear-chain mixed-spin antiferromagnets. Physical Review B, 1998, 58, 14424-14435.	3.2	41
51	Large-scale atlas of microarray data reveals the distinct expression landscape of different tissues in Arabidopsis. Plant Journal, 2016, 86, 472-480.	5.7	39
52	Field-induced incommensurate-to-commensurate transition in $\text{Ba}_2\text{CuGe}_2\text{O}_7$. Physical Review B, 1998, 57, 2968-2978.	3.2	38
53	Universal Behavior of One-Dimensional Gapped Antiferromagnets in a Staggered Magnetic Field. Physical Review Letters, 1998, 80, 5786-5789.	7.8	37
54	Ecology-guided prediction of cross-feeding interactions in the human gut microbiome. Nature Communications, 2021, 12, 1335.	12.8	37

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55	A cross-study analysis of drug response prediction in cancer cell lines. <i>Briefings in Bioinformatics</i> , 2022, 23, .	6.5	37
56	Pan- and core- network analysis of co-expression genes in a model plant. <i>Scientific Reports</i> , 2016, 6, 38956.	3.3	36
57	1/fNoise in Bak-Tang-Wiesenfeld Models on Narrow Stripes. <i>Physical Review Letters</i> , 1999, 83, 2449-2452.	7.8	34
58	Correlation profiles and motifs in complex networks. , 2004, , 168-198.		34
59	Transcriptional Responses to Sucrose Mimic the Plant-Associated Life Style of the Plant Growth Promoting Endophyte <i>Enterobacter</i> sp. 638. <i>PLoS ONE</i> , 2015, 10, e0115455.	2.5	34
60	Universal distribution of component frequencies in biological and technological systems. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 6235-6239.	7.1	32
61	Spontaneous emergence of autocatalytic information-coding polymers. <i>Journal of Chemical Physics</i> , 2015, 143, 045102.	3.0	32
62	Modeling microbial cross-feeding at intermediate scale portrays community dynamics and species coexistence. <i>PLoS Computational Biology</i> , 2020, 16, e1008135.	3.2	32
63	Infinite Series of Exact Equations in the Bak-Sneppen Model of Biological Evolution. <i>Physical Review Letters</i> , 1996, 77, 1182-1185.	7.8	29
64	Exact solution of a stochastic directed sandpile model. <i>Physical Review E</i> , 2001, 63, 026111.	2.1	28
65	Stochastic social behavior coupled to COVID-19 dynamics leads to waves, plateaus, and an endemic state. <i>ELife</i> , 2021, 10, .	6.0	28
66	Square-lattice spiral magnet $\text{Ba}_2\text{CuGe}_2\text{O}_7$ in an in-plane magnetic field. <i>Physical Review B</i> , 1997, 56, 14006-14012.	3.2	27
67	Spreading out of perturbations in reversible reaction networks. <i>New Journal of Physics</i> , 2007, 9, 273-273.	2.9	27
68	Exploring an opinion network for taste prediction: An empirical study. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2007, 373, 753-758.	2.6	27
69	Modeling COVID-19 Dynamics in Illinois under Nonpharmaceutical Interventions. <i>Physical Review X</i> , 2020, 10, .	8.9	27
70	Self-organized critical directed percolation. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1996, 223, 1-6.	2.6	26
71	Quantum and classical dynamics in mixed-spin one-dimensional antiferromagnets. <i>Journal of Physics Condensed Matter</i> , 2001, 13, R525-R536.	1.8	26
72	Emergency ventilator for COVID-19. <i>PLoS ONE</i> , 2020, 15, e0244963.	2.5	26

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73	Protein interaction networks beyond artifacts. FEBS Letters, 2002, 530, 255-256.	2.8	25
74	Expansion Around the Mean-Field Solution of the Bak-Sneppen Model. Physical Review Letters, 1998, 80, 1457-1460.	7.8	24
75	Evolutionary Capacitance and Control of Protein Stability in Protein-Protein Interaction Networks. PLoS Computational Biology, 2013, 9, e1003023.	3.2	24
76	Structured sequences emerge from random pool when replicated by templated ligation. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	24
77	Computational architecture of the yeast regulatory network. Physical Biology, 2005, 2, S94-S100.	1.8	23
78	Joint scaling laws in functional and evolutionary categories in prokaryotic genomes. Nucleic Acids Research, 2012, 40, 530-540.	14.5	23
79	Hitchhiking, collapse, and contingency in phage infections of migrating bacterial populations. ISME Journal, 2020, 14, 2007-2018.	9.8	23
80	Detection of the dominant direction of information flow and feedback links in densely interconnected regulatory networks. BMC Bioinformatics, 2008, 9, 424.	2.6	21
81	Mitigation of SARS-CoV-2 transmission at a large public university. Nature Communications, 2022, 13, .	12.8	21
82	Scaling theory of depinning in the Sneppen model. Physical Review E, 1994, 50, R643-R646.	2.1	18
83	Probability distribution of drawdowns in risky investments. Physica A: Statistical Mechanics and Its Applications, 1999, 262, 232-241.	2.6	18
84	A Toolbox Model of Evolution of Metabolic Pathways on Networks of Arbitrary Topology. PLoS Computational Biology, 2011, 7, e1001137.	3.2	18
85	Laws for Stationary States in Systems with Extremal Dynamics. Physical Review Letters, 1995, 74, 4253-4256.	7.8	17
86	Role of single-ion excitations in the mixed-spin quasi-one-dimensional quantum antiferromagnet Nd ₂ BaNiO ₅ . Physical Review B, 2000, 61, 11601-11612.	3.2	17
87	The network structure and eco-evolutionary dynamics of CRISPR-induced immune diversification. Nature Ecology and Evolution, 2020, 4, 1650-1660.	7.8	17
88	Complementary resource preferences spontaneously emerge in diauxic microbial communities. Nature Communications, 2021, 12, 6661.	12.8	17
89	Critical exponents of the anisotropic Bak-Sneppen model. Physical Review E, 1998, 58, 7141-7145.	2.1	15
90	Onset of natural selection in populations of autocatalytic heteropolymers. Journal of Chemical Physics, 2018, 149, 134901.	3.0	15

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91	Phase transitions in social networks inspired by the Schelling model. <i>Physical Review E</i> , 2018, 98, .	2.1	15
92	Prediction of Protein-protein Interactions on the Basis of Evolutionary Conservation of Protein Functions. <i>Evolutionary Bioinformatics</i> , 2007, 3, 117693430700300.	1.2	14
93	Simple Model of a Limit Order-Driven Market. <i>SSRN Electronic Journal</i> , 2000, , .	0.4	13
94	Comment on "Role of Intermittency in Urban Development: A Model of Large-Scale City Formation". <i>Physical Review Letters</i> , 1998, 80, 4830-4830.	7.8	11
95	Better by half. <i>Nature Physics</i> , 2007, 3, 16-18.	16.7	11
96	Large-Scale Public Transcriptomic Data Mining Reveals a Tight Connection between the Transport of Nitrogen and Other Transport Processes in Arabidopsis. <i>Frontiers in Plant Science</i> , 2016, 7, 1207.	3.6	9
97	Parameters of proteome evolution from histograms of amino-acid sequence identities of paralogous proteins. <i>Biology Direct</i> , 2007, 2, 32.	4.6	8
98	Diversity Waves in Collapse-Driven Population Dynamics. <i>PLoS Computational Biology</i> , 2015, 11, e1004440.	3.2	8
99	Family-specific scaling laws in bacterial genomes. <i>Nucleic Acids Research</i> , 2017, 45, 7615-7622.	14.5	8
100	DOES THE PRICE MULTIPLIER EFFECT ALSO HOLD FOR STOCKS?. <i>International Journal of Modern Physics C</i> , 2003, 14, 1439-1451.	1.7	7
101	Fluctuations in Mass-Action Equilibrium of Protein Binding Networks. <i>Physical Review Letters</i> , 2008, 101, 268102.	7.8	7
102	Detection of Topological Patterns in Protein Networks. , 2004, 26, 33-47.		6
103	DREISS: Using State-Space Models to Infer the Dynamics of Gene Expression Driven by External and Internal Regulatory Networks. <i>PLoS Computational Biology</i> , 2016, 12, e1005146.	3.2	6
104	The conundrum of stock versus bond prices. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2004, 335, 164-182.	2.6	5
105	Role model for modules. <i>Nature Physics</i> , 2007, 3, 18-19.	16.7	5
106	Optimal ranking in networks with community structure. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2007, 373, 831-836.	2.6	5
107	Power laws in chess. <i>Physics Magazine</i> , 0, 2, .	0.1	5
108	Regime Shifts in a Phage-Bacterium Ecosystem and Strategies for Its Control. <i>MSystems</i> , 2019, 4, .	3.8	4

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109	Price Fluctuations from the Order Book Perspective - Empirical Facts and a Simple Model. SSRN Electronic Journal, 0, , .	0.4	4
110	Prediction of protein-protein interactions on the basis of evolutionary conservation of protein functions. Evolutionary Bioinformatics, 2007, 3, 197-206.	1.2	3
111	Severe population collapses and species extinctions in multihost epidemic dynamics. Physical Review E, 2017, 96, 022412.	2.1	2
112	Topological and Dynamical Properties of Protein Interaction Networks. Computational Biology, 2008, , 115-137.	0.2	2
113	Comparative network analysis of gene co-expression networks reveals the conserved and species-specific functions of cell-wall related genes between Arabidopsis and Poplar. , 2013, , .		1
114	Correlations, mean-field properties, and scaling of a one-dimensional sandpile model. Physical Review E, 1993, 48, 863-866.	2.1	0
115	Mass-Action Equilibrium, Noise, and Non-Specific Interactions in Protein Interaction Networks. Biophysical Journal, 2011, 100, 342a.	0.5	0
116	Measuring social networks using proximity sensors. , 2015, , .		0
117	Measures of Globalization Based on Cross-Correlations of World Financial Indices. SSRN Electronic Journal, 0, , .	0.4	0
118	UV-induced mutagenesis in Escherichia coli SOS response: A quantitative model. PLoS Computational Biology, 2005, preprint, e41.	3.2	0
119	Large-Scale Topological Properties of Molecular Networks. , 2006, , 25-39.		0
120	EFFECTS OF COMMUNITY STRUCTURE ON SEARCH AND RANKING IN COMPLEX NETWORKS. , 2006, , 29-37.		0
121	Title is missing!. , 2020, 16, e1008135.		0
122	Title is missing!. , 2020, 16, e1008135.		0
123	Title is missing!. , 2020, 16, e1008135.		0
124	Title is missing!. , 2020, 16, e1008135.		0