

# Sergei S Maslov

## List of Publications by Year in descending order

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124  
papers

9,596  
citations

81434

41  
h-index

48101

92  
g-index

159  
all docs

159  
docs citations

159  
times ranked

12003  
citing authors

#	ARTICLE	IF	CITATIONS
1	A cross-study analysis of drug response prediction in cancer cell lines. Briefings in Bioinformatics, 2022, 23, .	3.2	37
2	Mitigation of SARS-CoV-2 transmission at a large public university. Nature Communications, 2022, 13, .	5.8	21
3	Ecology-guided prediction of cross-feeding interactions in the human gut microbiome. Nature Communications, 2021, 12, 1335.	5.8	37
4	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, .	3.3	24
5	Time-dependent heterogeneity leads to transient suppression of the COVID-19 epidemic, not herd immunity. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	57
6	Stochastic social behavior coupled to COVID-19 dynamics leads to waves, plateaus, and an endemic state. ELife, 2021, 10, .	2.8	28
7	Complementary resource preferences spontaneously emerge in diauxic microbial communities. Nature Communications, 2021, 12, 6661.	5.8	17
8	The network structure and eco-evolutionary dynamics of CRISPR-induced immune diversification. Nature Ecology and Evolution, 2020, 4, 1650-1660.	3.4	17
9	Modeling microbial cross-feeding at intermediate scale portrays community dynamics and species coexistence. PLoS Computational Biology, 2020, 16, e1008135.	1.5	32
10	Modeling COVID-19 Dynamics in Illinois under Nonpharmaceutical Interventions. Physical Review X, 2020, 10, .	2.8	27
11	Hitchhiking, collapse, and contingency in phage infections of migrating bacterial populations. ISME Journal, 2020, 14, 2007-2018.	4.4	23
12	Transforming the Language of Life. , 2020, , .		50
13	Emergency ventilator for COVID-19. PLoS ONE, 2020, 15, e0244963.	1.1	26
14	Title is missing!. , 2020, 16, e1008135.		0
15	Title is missing!. , 2020, 16, e1008135.		0
16	Title is missing!. , 2020, 16, e1008135.		0
17	Title is missing!. , 2020, 16, e1008135.		0
18	Regime Shifts in a Phage-Bacterium Ecosystem and Strategies for Its Control. MSystems, 2019, 4, .	1.7	4

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19	Evidence for a multi-level trophic organization of the human gut microbiome. <i>PLoS Computational Biology</i> , 2019, 15, e1007524.	1.5	42
20	Multistability and regime shifts in microbial communities explained by competition for essential nutrients. <i>ELife</i> , 2019, 8, .	2.8	48
21	Diversity, Stability, and Reproducibility in Stochastically Assembled Microbial Ecosystems. <i>Physical Review Letters</i> , 2018, 120, 158102.	2.9	65
22	Onset of natural selection in populations of autocatalytic heteropolymers. <i>Journal of Chemical Physics</i> , 2018, 149, 134901.	1.2	15
23	Predicting tumor cell line response to drug pairs with deep learning. <i>BMC Bioinformatics</i> , 2018, 19, 486.	1.2	84
24	Phase transitions in social networks inspired by the Schelling model. <i>Physical Review E</i> , 2018, 98, .	0.8	15
25	Multiple stable states in microbial communities explained by the stable marriage problem. <i>ISME Journal</i> , 2018, 12, 2823-2834.	4.4	73
26	KBase: The United States Department of Energy Systems Biology Knowledgebase. <i>Nature Biotechnology</i> , 2018, 36, 566-569.	9.4	955
27	Population cycles and species diversity in dynamic Kill-the-Winner model of microbial ecosystems. <i>Scientific Reports</i> , 2017, 7, 39642.	1.6	80
28	Severe population collapses and species extinctions in multihost epidemic dynamics. <i>Physical Review E</i> , 2017, 96, 022412.	0.8	2
29	Recombination-Driven Genome Evolution and Stability of Bacterial Species. <i>Genetics</i> , 2017, 207, 281-295.	1.2	47
30	Family-specific scaling laws in bacterial genomes. <i>Nucleic Acids Research</i> , 2017, 45, 7615-7622.	6.5	8
31	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.	1.7	9
32	Large-scale atlas of microarray data reveals the distinct expression landscape of different tissues in Arabidopsis. <i>Plant Journal</i> , 2016, 86, 472-480.	2.8	39
33	Pan- and core- network analysis of co-expression genes in a model plant. <i>Scientific Reports</i> , 2016, 6, 38956.	1.6	36
34	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.	1.5	6
35	Well-temperate phage: optimal bet-hedging against local environmental collapses. <i>Scientific Reports</i> , 2015, 5, 10523.	1.6	63
36	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.	1.1	34

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37	Diversity Waves in Collapse-Driven Population Dynamics. PLoS Computational Biology, 2015, 11, e1004440.	1.5	8
38	Measuring social networks using proximity sensors. , 2015, , .		0
39	Recombinant transfer in the basic genome of <i>Escherichia coli</i> . Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 9070-9075.	3.3	77
40	Spontaneous emergence of autocatalytic information-coding polymers. Journal of Chemical Physics, 2015, 143, 045102.	1.2	32
41	Universal distribution of component frequencies in biological and technological systems. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 6235-6239.	3.3	32
42	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
43	Evolutionary Capacitance and Control of Protein Stability in Protein-Protein Interaction Networks. PLoS Computational Biology, 2013, 9, e1003023.	1.5	24
44	Joint scaling laws in functional and evolutionary categories in prokaryotic genomes. Nucleic Acids Research, 2012, 40, 530-540.	6.5	23
45	Mass-Action Equilibrium, Noise, and Non-Specific Interactions in Protein Interaction Networks. Biophysical Journal, 2011, 100, 342a.	0.2	0
46	Topology of protein interaction network shapes protein abundances and strengths of their functional and nonspecific interactions. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 4258-4263.	3.3	94
47	A Toolbox Model of Evolution of Metabolic Pathways on Networks of Arbitrary Topology. PLoS Computational Biology, 2011, 7, e1001137.	1.5	18
48	Toolbox model of evolution of prokaryotic metabolic networks and their regulation. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 9743-9748.	3.3	100
49	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. Journal of Molecular Biology, 2009, 394, 653-680.	2.0	179
50	Detection of the dominant direction of information flow and feedback links in densely interconnected regulatory networks. BMC Bioinformatics, 2008, 9, 424.	1.2	21
51	Promise and Pitfalls of Extending Google's PageRank Algorithm to Citation Networks. Journal of Neuroscience, 2008, 28, 11103-11105.	1.7	94
52	Fluctuations in Mass-Action Equilibrium of Protein Binding Networks. Physical Review Letters, 2008, 101, 268102.	2.9	7
53	Constraints imposed by non-functional protein-protein interactions on gene expression and proteome size. Molecular Systems Biology, 2008, 4, 210.	3.2	99
54	Topological and Dynamical Properties of Protein Interaction Networks. Computational Biology, 2008, , 115-137.	0.1	2

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55	UV-Induced Mutagenesis in Escherichia coli SOS Response: A Quantitative Model. PLoS Computational Biology, 2007, 3, e41.	1.5	42
56	Spreading out of perturbations in reversible reaction networks. New Journal of Physics, 2007, 9, 273-273.	1.2	27
57	Propagation of large concentration changes in reversible protein-binding networks. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 13655-13660.	3.3	76
58	Prediction of Protein-protein Interactions on the Basis of Evolutionary Conservation of Protein Functions. Evolutionary Bioinformatics, 2007, 3, 117693430700300.	0.6	14
59	Ranking scientific publications using a model of network traffic. Journal of Statistical Mechanics: Theory and Experiment, 2007, 2007, P06010-P06010.	0.9	168
60	Parameters of proteome evolution from histograms of amino-acid sequence identities of paralogous proteins. Biology Direct, 2007, 2, 32.	1.9	8
61	Role model for modules. Nature Physics, 2007, 3, 18-19.	6.5	5
62	Exploring an opinion network for taste prediction: An empirical study. Physica A: Statistical Mechanics and Its Applications, 2007, 373, 753-758.	1.2	27
63	Optimal ranking in networks with community structure. Physica A: Statistical Mechanics and Its Applications, 2007, 373, 831-836.	1.2	5
64	Finding scientific gems with Google's PageRank algorithm. Journal of Informetrics, 2007, 1, 8-15.	1.4	365
65	Better by half. Nature Physics, 2007, 3, 16-18.	6.5	11
66	Prediction of protein-protein interactions on the basis of evolutionary conservation of protein functions. Evolutionary Bioinformatics, 2007, 3, 197-206.	0.6	3
67	Automatic pathway building in biological association networks. BMC Bioinformatics, 2006, 7, 171.	1.2	83
68	Large-Scale Topological Properties of Molecular Networks. , 2006, , 25-39.		0
69	EFFECTS OF COMMUNITY STRUCTURE ON SEARCH AND RANKING IN COMPLEX NETWORKS. , 2006, , 29-37.		0
70	Binding properties and evolution of homodimers in protein-protein interaction networks. Nucleic Acids Research, 2005, 33, 3629-3635.	6.5	159
71	Computational architecture of the yeast regulatory network. Physical Biology, 2005, 2, S94-S100.	0.8	23
72	UV-induced mutagenesis in Escherichia coli SOS response: A quantitative model. PLoS Computational Biology, 2005, preprint, e41.	1.5	0

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73	Hierarchy Measures in Complex Networks. Physical Review Letters, 2004, 92, 178702.	2.9	107
74	Upstream plasticity and downstream robustness in evolution of molecular networks. BMC Evolutionary Biology, 2004, 4, 9.	3.2	62
75	Detection of topological patterns in complex networks: correlation profile of the internet. Physica A: Statistical Mechanics and Its Applications, 2004, 333, 529-540.	1.2	265
76	The conundrum of stock versus bond prices. Physica A: Statistical Mechanics and Its Applications, 2004, 335, 164-182.	1.2	5
77	Diffusion on complex networks: a way to probe their large-scale topological structures. Physica A: Statistical Mechanics and Its Applications, 2004, 336, 163-173.	1.2	47
78	Correlation profiles and motifs in complex networks. , 2004, , 168-198.		34
79	Detection of Topological Patterns in Protein Networks. , 2004, 26, 33-47.		6
80	Modularity and Extreme Edges of the Internet. Physical Review Letters, 2003, 90, 148701.	2.9	162
81	DOES THE PRICE MULTIPLIER EFFECT ALSO HOLD FOR STOCKS?. International Journal of Modern Physics C, 2003, 14, 1439-1451.	0.8	7
82	Specificity and Stability in Topology of Protein Networks. Science, 2002, 296, 910-913.	6.0	2,649
83	Protein interaction networks beyond artifacts. FEBS Letters, 2002, 530, 255-256.	1.3	25
84	Price fluctuations from the order book perspective—empirical facts and a simple model. Physica A: Statistical Mechanics and Its Applications, 2001, 299, 234-246.	1.2	130
85	Measures of globalization based on cross-correlations of world financial indices. Physica A: Statistical Mechanics and Its Applications, 2001, 301, 397-406.	1.2	42
86	Quantum and classical dynamics in mixed-spin one-dimensional antiferromagnets. Journal of Physics Condensed Matter, 2001, 13, R525-R536.	0.7	26
87	Exact solution of a stochastic directed sandpile model. Physical Review E, 2001, 63, 026111.	0.8	28
88	Extracting Hidden Information from Knowledge Networks. Physical Review Letters, 2001, 87, 248701.	2.9	86
89	Simple model of a limit order-driven market. Physica A: Statistical Mechanics and Its Applications, 2000, 278, 571-578.	1.2	192
90	Simple Model of a Limit Order-Driven Market. SSRN Electronic Journal, 2000, , .	0.4	13

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91	Role of single-ion excitations in the mixed-spin quasi-one-dimensional quantum antiferromagnet $\text{Nd}_2\text{BaNiO}_5$ . <i>Physical Review B</i> , 2000, 61, 11601-11612.	1.1	17
92	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.	2.9	53
93	$1/f$ Noise in Bak-Tang-Wiesenfeld Models on Narrow Stripes. <i>Physical Review Letters</i> , 1999, 83, 2449-2452.	2.9	34
94	Magnetic anisotropy and low-energy spin waves in the Dzyaloshinskii-Moriya spiral magnet $\text{Ba}_2\text{CuGe}_2\text{O}_7$ . <i>Physical Review B</i> , 1999, 59, 11432-11444.	1.1	63
95	$\text{BaCu}_2\text{Si}_2\text{O}_7$ : A quasi-one-dimensional $S=1/2$ antiferromagnetic chain system. <i>Physical Review B</i> , 1999, 60, 6601-6607.	1.1	92
96	Probability distribution of drawdowns in risky investments. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1999, 262, 232-241.	1.2	18
97	Infrared Studies of the Onset of Conductivity in Ultrathin Pb Films. <i>Physical Review Letters</i> , 1999, 83, 4880-4883.	2.9	44
98	Dynamical optimization theory of a diversified portfolio. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1998, 253, 403-418.	1.2	67
99	Experimental Measurement of the Staggered Magnetization Curve for a Haldane Spin Chain. <i>Physical Review Letters</i> , 1998, 80, 3630-3633.	2.9	55
100	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. <i>Physical Review B</i> , 1998, 58, 14424-14435.	1.1	41
101	Critical exponents of the anisotropic Bak-Sneppen model. <i>Physical Review E</i> , 1998, 58, 7141-7145.	0.8	15
102	Universal Behavior of One-Dimensional Gapped Antiferromagnets in a Staggered Magnetic Field. <i>Physical Review Letters</i> , 1998, 80, 5786-5789.	2.9	37
103	Comment on "Role of Intermittency in Urban Development: A Model of Large-Scale City Formation". <i>Physical Review Letters</i> , 1998, 80, 4830-4830.	2.9	11
104	Experimental Evidence for Kaplan-Shekhtman-Entin-Wohlman-Aharony Interactions in $\text{Ba}_2\text{CuGe}_2\text{O}_7$ . <i>Physical Review Letters</i> , 1998, 81, 5410-5413.	2.9	52
105	Expansion Around the Mean-Field Solution of the Bak-Sneppen Model. <i>Physical Review Letters</i> , 1998, 80, 1457-1460.	2.9	24
106	Field-induced incommensurate-to-commensurate transition in $\text{Ba}_2\text{CuGe}_2\text{O}_7$ . <i>Physical Review B</i> , 1998, 57, 2968-2978.	1.1	38
107	Coexistence of Haldane-gap excitations and long-range antiferromagnetic order in mixed-spin nickelates $\text{R}_2\text{BaNiO}_5$ . <i>Physical Review B</i> , 1998, 57, 68-71.	1.1	43
108	Optimal Investment Strategy for Risky Assets. <i>International Journal of Theoretical and Applied Finance</i> , 1998, 01, 377-387.	0.2	52

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109	Field-Induced Commensurate-Incommensurate Phase Transition in a Dzyaloshinskii-Moriya Spiral Antiferromagnet. <i>Physical Review Letters</i> , 1997, 78, 4857-4860.	2.9	84
110	Square-lattice spiral magnet Ba <sub>2</sub> CuGe <sub>2</sub> O <sub>7</sub> in an in-plane magnetic field. <i>Physical Review B</i> , 1997, 56, 14006-14012.	1.1	27
111	Avalanche dynamics in evolution, growth, and depinning models. <i>Physical Review E</i> , 1996, 53, 414-443.	0.8	467
112	Self-organized critical directed percolation. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1996, 223, 1-6.	1.2	26
113	Infinite Series of Exact Equations in the Bak-Sneppen Model of Biological Evolution. <i>Physical Review Letters</i> , 1996, 77, 1182-1185.	2.9	29
114	Laws for Stationary States in Systems with Extremal Dynamics. <i>Physical Review Letters</i> , 1995, 74, 4253-4256.	2.9	17
115	Time Directed Avalanches in Invasion Models. <i>Physical Review Letters</i> , 1995, 74, 562-565.	2.9	47
116	Exactly Solved Model of Self-Organized Criticality. <i>Physical Review Letters</i> , 1995, 75, 1550-1553.	2.9	42
117	Scaling theory of depinning in the Sneppen model. <i>Physical Review E</i> , 1994, 50, R643-R646.	0.8	18
118	Avalanches and Noise in Evolution and Growth Models. <i>Physical Review Letters</i> , 1994, 73, 2162-2165.	2.9	96
119	Field Theory for a Model of Self-Organized Criticality. <i>Europhysics Letters</i> , 1994, 27, 97-102.	0.7	98
120	Correlations, mean-field properties, and scaling of a one-dimensional sandpile model. <i>Physical Review E</i> , 1993, 48, 863-866.	0.8	0
121	The First Critical Field and Locking-Unlocking Phase Transition in Layered Superconductors. <i>Europhysics Letters</i> , 1991, 14, 591-595.	0.7	41
122	Power laws in chess. <i>Physics Magazine</i> , 0, 2, .	0.1	5
123	Price Fluctuations from the Order Book Perspective - Empirical Facts and a Simple Model. <i>SSRN Electronic Journal</i> , 0, , .	0.4	4
124	Measures of Globalization Based on Cross-Correlations of World Financial Indices. <i>SSRN Electronic Journal</i> , 0, , .	0.4	0