

Steven H Strogatz

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/8580813/publications.pdf>

Version: 2024-02-01

156
papers

68,358
citations

11608

70
h-index

7333

152
g-index

178
all docs

178
docs citations

178
times ranked

37351
citing authors

#	ARTICLE	IF	CITATIONS
1	Collective dynamics of "small-world"™ networks. <i>Nature</i> , 1998, 393, 440-442.	13.7	34,143
2	Exploring complex networks. <i>Nature</i> , 2001, 410, 268-276.	13.7	7,013
3	From Kuramoto to Crawford: exploring the onset of synchronization in populations of coupled oscillators. <i>Physica D: Nonlinear Phenomena</i> , 2000, 143, 1-20.	1.3	2,288
4	Network Robustness and Fragility: Percolation on Random Graphs. <i>Physical Review Letters</i> , 2000, 85, 5468-5471.	2.9	1,970
5	Scientific collaboration networks. II. Shortest paths, weighted networks, and centrality. <i>Physical Review E</i> , 2001, 64, 016132.	0.8	1,763
6	Synchronization of Pulse-Coupled Biological Oscillators. <i>SIAM Journal on Applied Mathematics</i> , 1990, 50, 1645-1662.	0.8	1,721
7	Chimera States for Coupled Oscillators. <i>Physical Review Letters</i> , 2004, 93, 174102.	2.9	1,139
8	Random graph models of social networks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002, 99, 2566-2572.	3.3	946
9	Synchronization of Lorenz-based chaotic circuits with applications to communications. <i>IEEE Transactions on Circuits and Systems Part 2: Express Briefs</i> , 1993, 40, 626-633.	2.3	908
10	Coupled Oscillators and Biological Synchronization. <i>Scientific American</i> , 1993, 269, 102-109.	1.0	782
11	Bright light resets the human circadian pacemaker independent of the timing of the sleep-wake cycle. <i>Science</i> , 1986, 233, 667-671.	6.0	715
12	Quantifying the benefits of vehicle pooling with shareability networks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 13290-13294.	3.3	541
13	Synchronization Transitions in a Disordered Josephson Series Array. <i>Physical Review Letters</i> , 1996, 76, 404-407.	2.9	529
14	Modeling a synthetic multicellular clock: Repressilators coupled by quorum sensing. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2004, 101, 10955-10960.	3.3	512
15	Solvable Model for Chimera States of Coupled Oscillators. <i>Physical Review Letters</i> , 2008, 101, 084103.	2.9	499
16	Time Delay in the Kuramoto Model of Coupled Oscillators. <i>Physical Review Letters</i> , 1999, 82, 648-651.	2.9	486
17	Crowd synchrony on the Millennium Bridge. <i>Nature</i> , 2005, 438, 43-44.	13.7	474
18	Cellular Construction of a Circadian Clock: Period Determination in the Suprachiasmatic Nuclei. <i>Cell</i> , 1997, 91, 855-860.	13.5	456

#	ARTICLE	IF	CITATIONS
19	Stability of incoherence in a population of coupled oscillators. <i>Journal of Statistical Physics</i> , 1991, 63, 613-635.	0.5	434
20	Five parametric resonances in a microelectromechanical system. <i>Nature</i> , 1998, 396, 149-152.	13.7	416
21	Constants of motion for superconducting Josephson arrays. <i>Physica D: Nonlinear Phenomena</i> , 1994, 74, 197-253.	1.3	393
22	Modelling the dynamics of language death. <i>Nature</i> , 2003, 424, 900-900.	13.7	387
23	Are randomly grown graphs really random?. <i>Physical Review E</i> , 2001, 64, 041902.	0.8	325
24	Frequency locking in Josephson arrays: Connection with the Kuramoto model. <i>Physical Review E</i> , 1998, 57, 1563-1569.	0.8	307
25	Kuramoto Model of Coupled Oscillators with Positive and Negative Coupling Parameters: An Example of Conformist and Contrarian Oscillators. <i>Physical Review Letters</i> , 2011, 106, 054102.	2.9	302
26	Redrawing the Map of Great Britain from a Network of Human Interactions. <i>PLoS ONE</i> , 2010, 5, e14248.	1.1	290
27	Amplitude death in an array of limit-cycle oscillators. <i>Journal of Statistical Physics</i> , 1990, 60, 245-262.	0.5	259
28	Addressing the minimum fleet problem in on-demand urban mobility. <i>Nature</i> , 2018, 557, 534-538.	13.7	256
29	Phase diagram for the collective behavior of limit-cycle oscillators. <i>Physical Review Letters</i> , 1990, 65, 1701-1704.	2.9	245
30	Solvable Model of Spiral Wave Chimeras. <i>Physical Review Letters</i> , 2010, 104, 044101.	2.9	242
31	Integrability of a globally coupled oscillator array. <i>Physical Review Letters</i> , 1993, 70, 2391-2394.	2.9	233
32	Exact results for the Kuramoto model with a bimodal frequency distribution. <i>Physical Review E</i> , 2009, 79, 026204.	0.8	230
33	Coupled nonlinear oscillators below the synchronization threshold: Relaxation by generalized Landau damping. <i>Physical Review Letters</i> , 1992, 68, 2730-2733.	2.9	225
34	Continuous-time model of structural balance. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 1771-1776.	3.3	224
35	The size of the sync basin. <i>Chaos</i> , 2006, 16, 015103.	1.0	223
36	Dynamics of a large system of coupled nonlinear oscillators. <i>Physica D: Nonlinear Phenomena</i> , 1991, 52, 293-331.	1.3	221

#	ARTICLE	IF	CITATIONS
37	CHIMERA STATES IN A RING OF NONLOCALLY COUPLED OSCILLATORS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2006, 16, 21-37.	0.7	220
38	Distributed synchronization in wireless networks. IEEE Signal Processing Magazine, 2008, 25, 81-97.	4.6	214
39	Synchronization in oscillator networks with delayed coupling: A stability criterion. Physical Review E, 2003, 67, 036204.	0.8	213
40	Structure of chromatin and the linking number of DNA.. Proceedings of the National Academy of Sciences of the United States of America, 1981, 78, 1461-1465.	3.3	204
41	Oscillators that sync and swarm. Nature Communications, 2017, 8, 1504.	5.8	184
42	Phase-locking and critical phenomena in lattices of coupled nonlinear oscillators with random intrinsic frequencies. Physica D: Nonlinear Phenomena, 1988, 31, 143-168.	1.3	182
43	Organizing centres for three-dimensional chemical waves. Nature, 1984, 311, 611-615.	13.7	163
44	Identical phase oscillators with global sinusoidal coupling evolve by Möbius group action. Chaos, 2009, 19, 043104.	1.0	163
45	The spectrum of the locked state for the Kuramoto model of coupled oscillators. Physica D: Nonlinear Phenomena, 2005, 205, 249-266.	1.3	160
46	Stability diagram for the forced Kuramoto model. Chaos, 2008, 18, 043128.	1.0	143
47	Energy Landscape of Social Balance. Physical Review Letters, 2009, 103, 198701.	2.9	139
48	Modeling walker synchronization on the Millennium Bridge. Physical Review E, 2007, 75, 021110.	0.8	134
49	Theoretical mechanics: Crowd synchrony on the Millennium Bridge. Nature, 2005, 438, 43-44.	13.7	129
50	Stochastic resonance in an autonomous system with a nonuniform limit cycle. Physical Review E, 1994, 50, 3249-3250.	0.8	125
51	Death by delay. Nature, 1998, 394, 316-317.	13.7	123
52	The dynamics of correlated novelties. Scientific Reports, 2014, 4, 5890.	1.6	122
53	Conformists and contrarians in a Kuramoto model with identical natural frequencies. Physical Review E, 2011, 84, 046202.	0.8	120
54	Phase Diagram for the Winfree Model of Coupled Nonlinear Oscillators. Physical Review Letters, 2001, 86, 4278-4281.	2.9	118

#	ARTICLE	IF	CITATIONS
55	Collective synchronisation in lattices of nonlinear oscillators with randomness. <i>Journal of Physics A</i> , 1988, 21, L699-L705.	1.6	116
56	Dynamics of circular arrays of Josephson junctions and the discrete sine-Gordon equation. <i>Physica D: Nonlinear Phenomena</i> , 1996, 97, 429-470.	1.3	116
57	Dynamics of a globally coupled oscillator array. <i>Physica D: Nonlinear Phenomena</i> , 1991, 48, 102-112.	1.3	110
58	The Spectrum of the Partially Locked State for the Kuramoto Model. <i>Journal of Nonlinear Science</i> , 2007, 17, 309-347.	1.0	105
59	Kink Propagation in a Highly Discrete System: Observation of Phase Locking to Linear Waves. <i>Physical Review Letters</i> , 1995, 74, 174-177.	2.9	104
60	Splay states in globally coupled Josephson arrays: Analytical prediction of Floquet multipliers. <i>Physical Review E</i> , 1993, 47, 220-227.	0.8	100
61	Chaotic streamlines inside drops immersed in steady Stokes flows. <i>Journal of Fluid Mechanics</i> , 1991, 232, 629.	1.4	91
62	Collective dynamics of coupled oscillators with random pinning. <i>Physica D: Nonlinear Phenomena</i> , 1989, 36, 23-50.	1.3	89
63	Circadian Regulation Dominates Homeostatic Control of Sleep Length and Prior Wake Length in Humans. <i>Sleep</i> , 1986, 9, 353-364.	0.6	88
64	Averaging of globally coupled oscillators. <i>Physica D: Nonlinear Phenomena</i> , 1992, 55, 239-250.	1.3	86
65	Simple model of epidemics with pathogen mutation. <i>Physical Review E</i> , 2002, 65, 031915.	0.8	81
66	ROBUSTNESS AND SIGNAL RECOVERY IN A SYNCHRONIZED CHAOTIC SYSTEM. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 1993, 03, 1629-1638.	0.7	80
67	Simple Model of Collective Transport with Phase Slippage. <i>Physical Review Letters</i> , 1988, 61, 2380-2383.	2.9	79
68	Superlinear scaling for innovation in cities. <i>Physical Review E</i> , 2009, 79, 016115.	0.8	78
69	THE STRUCTURE OF PHONOLOGICAL NETWORKS ACROSS MULTIPLE LANGUAGES. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 2010, 20, 679-685.	0.7	78
70	Singular filaments organize chemical waves in three dimensions. <i>Physica D: Nonlinear Phenomena</i> , 1983, 8, 35-49.	1.3	73
71	Invariant submanifold for series arrays of Josephson junctions. <i>Chaos</i> , 2009, 19, 013132.	1.0	69
72	Mean-field behavior in coupled oscillators with attractive and repulsive interactions. <i>Physical Review E</i> , 2012, 85, 056210.	0.8	63

#	ARTICLE	IF	CITATIONS
73	Whirling Modes and Parametric Instabilities in the Discrete Sine-Gordon Equation: Experimental Tests in Josephson Rings. <i>Physical Review Letters</i> , 1995, 74, 379-382.	2.9	62
74	DYNAMICS OF A LARGE ARRAY OF GLOBALLY COUPLED LASERS WITH DISTRIBUTED FREQUENCIES. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 2001, 11, 2359-2374.	0.7	62
75	Human sleep and circadian rhythms: a simple model based on two coupled oscillators. <i>Journal of Mathematical Biology</i> , 1987, 25, 327-347.	0.8	61
76	Nonlinear dynamics of the rock-paper-scissors game with mutations. <i>Physical Review E</i> , 2015, 91, 052907.	0.8	60
77	Scaling Laws for Dynamical Hysteresis in a Multidimensional Laser System. <i>Physical Review Letters</i> , 1995, 74, 2220-2223.	2.9	57
78	Love Affairs and Differential Equations. <i>Mathematics Magazine</i> , 1988, 61, 35-35.	0.1	56
79	Encouraging Moderation: Clues from a Simple Model of Ideological Conflict. <i>Physical Review Letters</i> , 2012, 109, 118702.	2.9	51
80	Singular filaments organize chemical waves in three dimensions. <i>Physica D: Nonlinear Phenomena</i> , 1984, 13, 221-233.	1.3	50
81	Quantifying the sensing power of vehicle fleets. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 12752-12757.	3.3	50
82	Singular filaments organize chemical waves in three dimensions. <i>Physica D: Nonlinear Phenomena</i> , 1983, 9, 333-345.	1.3	49
83	Love Affairs and Differential Equations. <i>Mathematics Magazine</i> , 1988, 61, 35.	0.1	47
84	Education of a model student. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 1868-1873.	3.3	47
85	The Mathematical Structure of the Human Sleep-Wake Cycle. <i>Lecture Notes in Biomathematics</i> , 1986, , .	0.3	46
86	Predicted power laws for delayed switching of charge-density waves. <i>Physical Review B</i> , 1989, 40, 10501-10508.	1.1	45
87	Singular filaments organize chemical waves in three dimensions II. Twisted waves. <i>Physica D: Nonlinear Phenomena</i> , 1983, 9, 65-80.	1.3	44
88	Romanesque networks. <i>Nature</i> , 2005, 433, 365-366.	13.7	44
89	Comparative Analysis of Networks of Phonologically Similar Words in English and Spanish. <i>Entropy</i> , 2010, 12, 327-337.	1.1	39
90	Reversibility and noise sensitivity of Josephson arrays. <i>Physical Review Letters</i> , 1991, 66, 1094-1097.	2.9	38

#	ARTICLE	IF	CITATIONS
91	Norbert Wiener's Brain Waves. Lecture Notes in Biomathematics, 1994, , 122-138.	0.3	38
92	Dynamical Hysteresis without Static Hysteresis: Scaling Laws and Asymptotic Expansions. SIAM Journal on Applied Mathematics, 1997, 57, 1163-1187.	0.8	35
93	Nonlinear dynamics of a solid-state laser with injection. Physical Review E, 1998, 58, 4421-4435.	0.8	35
94	Singular unlocking transition in the Winfree model of coupled oscillators. Physical Review E, 2007, 75, 036218.	0.8	34
95	Interpreting the Human Phase Response Curve to Multiple Bright-Light Exposures. Journal of Biological Rhythms, 1990, 5, 169-174.	1.4	31
96	THE DIFFERENTIAL GEOMETRY OF SCROLL WAVES. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1991, 01, 723-744.	0.7	31
97	STABILITY OF SYNCHRONIZATION IN NETWORKS OF DIGITAL PHASE-LOCKED LOOPS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1995, 05, 983-990.	0.7	31
98	Ordering chaos with disorder. Nature, 1995, 378, 444-444.	13.7	25
99	Fitness dependence of the fixation-time distribution for evolutionary dynamics on graphs. Physical Review E, 2019, 100, 012408.	0.8	25
100	Conformational control of mechanical networks. Nature Physics, 2019, 15, 714-720.	6.5	24
101	Dense networks that do not synchronize and sparse ones that do. Chaos, 2020, 30, 083142.	1.0	24
102	Evolutionary game dynamics of controlled and automatic decision-making. Chaos, 2015, 25, 073120.	1.0	23
103	Evolutionary dynamics of incubation periods. ELife, 2017, 6, .	2.8	22
104	Displays on Display. IEEE Computer Graphics and Applications, 1984, 4, 66-69.	1.0	21
105	Phase diagram for the Kuramoto model with van Hemmen interactions. Physical Review E, 2014, 89, 012904.	0.8	21
106	Dynamics of one-dimensional Josephson-junction arrays. Physica D: Nonlinear Phenomena, 1998, 119, 219-226.	1.3	20
107	Self-organization in Kerr-cavity-soliton formation in parametric frequency combs. Physical Review A, 2016, 94, .	1.0	20
108	Volcano Transition in a Solvable Model of Frustrated Oscillators. Physical Review Letters, 2018, 120, 264102.	2.9	20

#	ARTICLE	IF	CITATIONS
109	Dynamics of a population of oscillatory and excitable elements. <i>Physical Review E</i> , 2016, 93, 062203.	0.8	19
110	Discreteness-induced resonances and ac voltage amplitudes in long one-dimensional Josephson junction arrays. <i>Journal of Applied Physics</i> , 1997, 82, 4661-4668.	1.1	18
111	The Kuramoto model on a sphere: Explaining its low-dimensional dynamics with group theory and hyperbolic geometry. <i>Chaos</i> , 2021, 31, 093113.	1.0	18
112	Synchronization as Aggregation: Cluster Kinetics of Pulse-Coupled Oscillators. <i>Physical Review Letters</i> , 2015, 115, 064101.	2.9	17
113	Open Peer Commentary. <i>Journal of Biological Rhythms</i> , 1987, 2, 317-329.	1.4	16
114	Phase coherence induced by correlated disorder. <i>Physical Review E</i> , 2016, 93, 022219.	0.8	16
115	Takeover times for a simple model of network infection. <i>Physical Review E</i> , 2017, 96, 012313.	0.8	16
116	Superconducting states and depinning transitions of Josephson ladders. <i>Physical Review B</i> , 1998, 57, 1181-1199.	1.1	15
117	The Birth of Period Three. <i>Mathematics Magazine</i> , 1995, 68, 42.	0.1	14
118	Resonance splitting in discrete planar arrays of Josephson junctions. <i>Journal of Applied Physics</i> , 1996, 79, 7864-7870.	1.1	13
119	Spontaneous Droplet Motion on a Periodically Compliant Substrate. <i>Langmuir</i> , 2017, 33, 4942-4947.	1.6	13
120	Delayed switching in a phase-slip model of charge-density-wave transport. <i>Physical Review B</i> , 1989, 40, 5588-5592.	1.1	12
121	Jump Bifurcation and Hysteresis in an Infinite-Dimensional Dynamical System of Coupled Spins. <i>SIAM Journal on Applied Mathematics</i> , 1990, 50, 108-124.	0.8	12
122	Limit Cycles Sparked by Mutation in the Repeated Prisoner's Dilemma. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 2014, 24, 1430035.	0.7	12
123	Toward the Darwinian transition: Switching between distributed and speciated states in a simple model of early life. <i>Physical Review E</i> , 2015, 92, 052909.	0.8	12
124	Designing temporal networks that synchronize under resource constraints. <i>Nature Communications</i> , 2021, 12, 3273.	5.8	12
125	Pattern Formation in Continuous and Coupled Systems. <i>The IMA Volumes in Mathematics and Its Applications</i> , 1999, , .	0.5	12
126	Comparing the locking threshold for rings and chains of oscillators. <i>Physical Review E</i> , 2016, 94, 062203.	0.8	11

#	ARTICLE	IF	CITATIONS
127	Basins with Tentacles. <i>Physical Review Letters</i> , 2021, 127, 194101.	2.9	11
128	Kuramoto model with uniformly spaced frequencies: Finite- N asymptotics of the locking threshold. <i>Physical Review E</i> , 2016, 93, 062220.	0.8	10
129	Synchronization of clocks and metronomes: A perturbation analysis based on multiple timescales. <i>Chaos</i> , 2021, 31, 023109.	1.0	10
130	Correlated disorder in the Kuramoto model: Effects on phase coherence, finite-size scaling, and dynamic fluctuations. <i>Chaos</i> , 2016, 26, 103105.	1.0	9
131	From Inflammation to Wound Healing: Using a Simple Model to Understand the Functional Versatility of Murine Macrophages. <i>Bulletin of Mathematical Biology</i> , 2011, 73, 2575-2604.	0.9	8
132	Frequency spirals. <i>Chaos</i> , 2016, 26, 094804.	1.0	8
133	Descendant distributions for the impact of mutant contagion on networks. <i>Physical Review Research</i> , 2020, 2, .	1.3	7
134	Asymptotic Absorption-Time Distributions in Extinction-Prone Markov Processes. <i>Physical Review Letters</i> , 2022, 128, .	2.9	7
135	Collective synchronisation in lattices of non-linear oscillators with randomness. <i>Journal of Physics A</i> , 1988, 21, 4649-4649.	1.6	6
136	Sufficiently dense Kuramoto networks are globally synchronizing. <i>Chaos</i> , 2021, 31, 073135.	1.0	6
137	Coupled metronomes on a moving platform with Coulomb friction. <i>Chaos</i> , 2022, 32, 043119.	1.0	6
138	Yeast oscillations, belousov-zhabotinsky waves, and the non-retraction theorem. <i>Mathematical Intelligencer</i> , 1985, 7, 9-17.	0.1	5
139	Spontaneous synchronization in nature. , 0, , .		5
140	Reply to Lopez et al.: Sustainable implementation of taxi sharing requires understanding systemic effects. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, E5489-E5489.	3.3	5
141	Estimating the torsional rigidity of DNA from supercoiling data. <i>Journal of Chemical Physics</i> , 1982, 77, 580-581.	1.2	4
142	Modeling the Interplay Between Seasonal Flu Outcomes and Individual Vaccination Decisions. <i>Bulletin of Mathematical Biology</i> , 2022, 84, 36.	0.9	4
143	Topology of zigzag chromatin. <i>Journal of Theoretical Biology</i> , 1983, 103, 601-607.	0.8	2
144	Vortices trapped in discrete Josephson rings. <i>Physica B: Condensed Matter</i> , 1994, 203, 490-496.	1.3	2

#	ARTICLE	IF	CITATIONS
145	Interactions of topological kinks in two coupled rings of nonlinear oscillators. Physical Review B, 1998, 58, 8749-8754.	1.1	2
146	Pinned states in Josephson arrays: A general stability theorem. Physical Review B, 1998, 58, 5215-5218.	1.1	2
147	Kuramoto-Like Synchronization in Parametric Frequency Combs. , 2014, , .		1
148	Synchronization Phenomena in Modelocked Parametric Frequency Combs. , 2014, , .		1
149	Rhythmic research. Nature, 1986, 323, 363-363.	13.7	0
150	Rhythm and reason. Nature, 1987, 329, 375-375.	13.7	0
151	Baby Doctors?. Science News, 1988, 133, 403.	0.1	0
152	Integral Representation of a Finite Spike. American Mathematical Monthly, 1990, 97, 901.	0.2	0
153	Resonant steps in parallel Josephson junction arrays: parametric instabilities of whirling modes. IEEE Transactions on Applied Superconductivity, 1995, 5, 2698-2701.	1.1	0
154	Arthur Winfree (1942-2002). Journal of Biological Rhythms, 2003, 18, 95-95.	1.4	0
155	Vortex Propagation in Discrete Josephson Rings. , 1995, , 587-598.		0
156	How a minority can win: Unrepresentative outcomes in a simple model of voter turnout. Physical Review E, 2021, 104, 054307.	0.8	0