

Steven H Strogatz

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148
papers

54,114
citations

66
h-index

178
g-index

178
ext. papers

62,310
ext. citations

8.6
avg, IF

8.17
L-index

#	Paper	IF	Citations
148	Collective dynamics of 'small-world' networks. <i>Nature</i> , 1998 , 393, 440-2	50.4	26324
147	Exploring complex networks. <i>Nature</i> , 2001 , 410, 268-76	50.4	5624
146	From Kuramoto to Crawford: exploring the onset of synchronization in populations of coupled oscillators. <i>Physica D: Nonlinear Phenomena</i> , 2000 , 143, 1-20	3.3	1841
145	Network robustness and fragility: percolation on random graphs. <i>Physical Review Letters</i> , 2000 , 85, 5468-71	7.1	1636
144	Synchronization of Pulse-Coupled Biological Oscillators. <i>SIAM Journal on Applied Mathematics</i> , 1990 , 50, 1645-1662	1.8	1409
143	Scientific collaboration networks. II. Shortest paths, weighted networks, and centrality. <i>Physical Review E</i> , 2001 , 64, 016132	2.4	1376
142	Chimera states for coupled oscillators. <i>Physical Review Letters</i> , 2004 , 93, 174102	7.4	908
141	Random graph models of social networks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002 , 99 Suppl 1, 2566-72	11.5	742
140	. <i>IEEE Transactions on Circuits and Systems Part 2: Express Briefs</i> , 1993 , 40, 626-633		655
139	Coupled oscillators and biological synchronization. <i>Scientific American</i> , 1993 , 269, 102-9	0.5	615
138	Bright light resets the human circadian pacemaker independent of the timing of the sleep-wake cycle. <i>Science</i> , 1986 , 233, 667-71	33.3	612
137	Synchronization transitions in a disordered Josephson series array. <i>Physical Review Letters</i> , 1996 , 76, 404-407	7.4	469
136	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, 10955-60	11.5	433
135	Solvable model for chimera states of coupled oscillators. <i>Physical Review Letters</i> , 2008 , 101, 084103	7.4	430
134	Time Delay in the Kuramoto Model of Coupled Oscillators. <i>Physical Review Letters</i> , 1999 , 82, 648-651	7.4	414
133	Cellular construction of a circadian clock: period determination in the suprachiasmatic nuclei. <i>Cell</i> , 1997 , 91, 855-60	56.2	409
132	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, 13290-4	11.5	383

131	Crowd synchrony on the Millennium Bridge. <i>Nature</i> , 2005 , 438, 43-44	50.4	375
130	Stability of incoherence in a population of coupled oscillators. <i>Journal of Statistical Physics</i> , 1991 , 63, 613-635	1.5	362
129	Five parametric resonances in a microelectromechanical system. <i>Nature</i> , 1998 , 396, 149-152	50.4	353
128	Constants of motion for superconducting Josephson arrays. <i>Physica D: Nonlinear Phenomena</i> , 1994 , 74, 197-253	3.3	333
127	Linguistics: modelling the dynamics of language death. <i>Nature</i> , 2003 , 424, 900	50.4	308
126	Are randomly grown graphs really random?. <i>Physical Review E</i> , 2001 , 64, 041902	2.4	266
125	Frequency locking in Josephson arrays: Connection with the Kuramoto model. <i>Physical Review E</i> , 1998 , 57, 1563-1569	2.4	258
124	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	7.4	241
123	Redrawing the map of Great Britain from a network of human interactions. <i>PLoS ONE</i> , 2010 , 5, e14248	3.7	236
122	Amplitude death in an array of limit-cycle oscillators. <i>Journal of Statistical Physics</i> , 1990 , 60, 245-262	1.5	223
121	Phase diagram for the collective behavior of limit-cycle oscillators. <i>Physical Review Letters</i> , 1990 , 65, 1701-1704	7.4	217
120	Solvable model of spiral wave chimeras. <i>Physical Review Letters</i> , 2010 , 104, 044101	7.4	212
119	Coupled nonlinear oscillators below the synchronization threshold: Relaxation by generalized Landau damping. <i>Physical Review Letters</i> , 1992 , 68, 2730-2733	7.4	201
118	Integrability of a globally coupled oscillator array. <i>Physical Review Letters</i> , 1993 , 70, 2391-2394	7.4	199
117	Exact results for the Kuramoto model with a bimodal frequency distribution. <i>Physical Review E</i> , 2009 , 79, 026204	2.4	194
116	CHIMERA STATES IN A RING OF NONLOCALLY COUPLED OSCILLATORS. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 2006 , 16, 21-37	2	188
115	Dynamics of a large system of coupled nonlinear oscillators. <i>Physica D: Nonlinear Phenomena</i> , 1991 , 52, 293-331	3.3	188
114	The size of the sync basin. <i>Chaos</i> , 2006 , 16, 015103	3.3	182

113	Continuous-time model of structural balance. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011 , 108, 1771-6	11.5	180
112	Synchronization in oscillator networks with delayed coupling: a stability criterion. <i>Physical Review E</i> , 2003 , 67, 036204	2.4	180
111	Structure of chromatin and the linking number of DNA. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1981 , 78, 1461-5	11.5	179
110	Distributed synchronization in wireless networks. <i>IEEE Signal Processing Magazine</i> , 2008 , 25, 81-97	9.4	168
109	Phase-locking and critical phenomena in lattices of coupled nonlinear oscillators with random intrinsic frequencies. <i>Physica D: Nonlinear Phenomena</i> , 1988 , 31, 143-168	3.3	165
108	Addressing the minimum fleet problem in on-demand urban mobility. <i>Nature</i> , 2018 , 557, 534-538	50.4	153
107	Organizing centres for three-dimensional chemical waves. <i>Nature</i> , 1984 , 311, 611-5	50.4	151
106	The spectrum of the locked state for the Kuramoto model of coupled oscillators. <i>Physica D: Nonlinear Phenomena</i> , 2005 , 205, 249-266	3.3	138
105	Identical phase oscillators with global sinusoidal coupling evolve by Mobius group action. <i>Chaos</i> , 2009 , 19, 043104	3.3	134
104	Stochastic resonance in an autonomous system with a nonuniform limit cycle. <i>Physical Review E</i> , 1994 , 50, 3249-3250	2.4	120
103	Modeling walker synchronization on the Millennium Bridge. <i>Physical Review E</i> , 2007 , 75, 021110	2.4	117
102	Stability diagram for the forced Kuramoto model. <i>Chaos</i> , 2008 , 18, 043128	3.3	114
101	Energy landscape of social balance. <i>Physical Review Letters</i> , 2009 , 103, 198701	7.4	113
100	Dynamics of circular arrays of Josephson junctions and the discrete sine-Gordon equation. <i>Physica D: Nonlinear Phenomena</i> , 1996 , 97, 429-470	3.3	112
99	Collective synchronisation in lattices of nonlinear oscillators with randomness. <i>Journal of Physics A</i> , 1988 , 21, L699-L705		106
98	Conformists and contrarians in a Kuramoto model with identical natural frequencies. <i>Physical Review E</i> , 2011 , 84, 046202	2.4	103
97	Dynamics of a globally coupled oscillator array. <i>Physica D: Nonlinear Phenomena</i> , 1991 , 48, 102-112	3.3	103
96	Phase diagram for the Winfree model of coupled nonlinear oscillators. <i>Physical Review Letters</i> , 2001 , 86, 4278-81	7.4	101

95	The Spectrum of the Partially Locked State for the Kuramoto Model. <i>Journal of Nonlinear Science</i> , 2007 , 17, 309-347	2.8	96
94	Kink propagation in a highly discrete system: Observation of phase locking to linear waves. <i>Physical Review Letters</i> , 1995 , 74, 174-177	7.4	96
93	Splay states in globally coupled Josephson arrays: Analytical prediction of Floquet multipliers. <i>Physical Review E</i> , 1993 , 47, 220-227	2.4	94
92	Theoretical mechanics: crowd synchrony on the Millennium Bridge. <i>Nature</i> , 2005 , 438, 43-4	50.4	93
91	Oscillators that sync and swarm. <i>Nature Communications</i> , 2017 , 8, 1504	17.4	87
90	Averaging of globally coupled oscillators. <i>Physica D: Nonlinear Phenomena</i> , 1992 , 55, 239-250	3.3	84
89	Chaotic streamlines inside drops immersed in steady Stokes flows. <i>Journal of Fluid Mechanics</i> , 1991 , 232, 629	3.7	83
88	Collective dynamics of coupled oscillators with random pinning. <i>Physica D: Nonlinear Phenomena</i> , 1989 , 36, 23-50	3.3	80
87	Circadian regulation dominates homeostatic control of sleep length and prior wake length in humans. <i>Sleep</i> , 1986 , 9, 353-64	1.1	79
86	The dynamics of correlated novelties. <i>Scientific Reports</i> , 2014 , 4, 5890	4.9	77
85	Simple model of collective transport with phase slippage. <i>Physical Review Letters</i> , 1988 , 61, 2380-2383	7.4	75
84	Simple model of epidemics with pathogen mutation. <i>Physical Review E</i> , 2002 , 65, 031915	2.4	70
83	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	2	66
82	Invariant submanifold for series arrays of Josephson junctions. <i>Chaos</i> , 2009 , 19, 013132	3.3	65
81	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	2	65
80	Singular filaments organize chemical waves in three dimensions. <i>Physica D: Nonlinear Phenomena</i> , 1983 , 8, 35-49	3.3	61
79	Superlinear scaling for innovation in cities. <i>Physical Review E</i> , 2009 , 79, 016115	2.4	59
78	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	7.4	56

77	Mean-field behavior in coupled oscillators with attractive and repulsive interactions. <i>Physical Review E</i> , 2012 , 85, 056210	2.4	55
76	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	2	54
75	Scaling laws for dynamical hysteresis in a multidimensional laser system. <i>Physical Review Letters</i> , 1995 , 74, 2220-2223	7.4	52
74	Human sleep and circadian rhythms: a simple model based on two coupled oscillators. <i>Journal of Mathematical Biology</i> , 1987 , 25, 327-47	2	50
73	Singular filaments organize chemical waves in three dimensions. <i>Physica D: Nonlinear Phenomena</i> , 1984 , 13, 221-233	3.3	49
72	Singular filaments organize chemical waves in three dimensions. <i>Physica D: Nonlinear Phenomena</i> , 1983 , 9, 333-345	3.3	44
71	Nonlinear dynamics of the rock-paper-scissors game with mutations. <i>Physical Review E</i> , 2015 , 91, 052907	2.4	43
70	Singular filaments organize chemical waves in three dimensions II. Twisted waves. <i>Physica D: Nonlinear Phenomena</i> , 1983 , 9, 65-80	3.3	41
69	The Mathematical Structure of the Human Sleep-Wake Cycle. <i>Lecture Notes in Biomathematics</i> , 1986 ,		40
68	Encouraging moderation: clues from a simple model of ideological conflict. <i>Physical Review Letters</i> , 2012 , 109, 118702	7.4	39
67	Love Affairs and Differential Equations. <i>Mathematics Magazine</i> , 1988 , 61, 35	0.1	39
66	Reversibility and noise sensitivity of Josephson arrays. <i>Physical Review Letters</i> , 1991 , 66, 1094-1097	7.4	37
65	Predicted power laws for delayed switching of charge-density waves. <i>Physical Review B</i> , 1989 , 40, 105013-10508	3.4	34
64	Comparative Analysis of Networks of Phonologically Similar Words in English and Spanish. <i>Entropy</i> , 2010 , 12, 327-337	2.8	31
63	Nonlinear dynamics of a solid-state laser with injection. <i>Physical Review E</i> , 1998 , 58, 4421-4435	2.4	31
62	Education of a model student. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, 1868-73	11.5	30
61	Dynamical Hysteresis without Static Hysteresis: Scaling Laws and Asymptotic Expansions. <i>SIAM Journal on Applied Mathematics</i> , 1997 , 57, 1163-1187	1.8	29
60	STABILITY OF SYNCHRONIZATION IN NETWORKS OF DIGITAL PHASE-LOCKED LOOPS. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 1995 , 05, 983-990	2	29

59	Interpreting the human phase response curve to multiple bright-light exposures. <i>Journal of Biological Rhythms</i> , 1990 , 5, 169-74	3.2	28
58	THE DIFFERENTIAL GEOMETRY OF SCROLL WAVES. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 1991 , 01, 723-744	2	27
57	Singular unlocking transition in the Winfree model of coupled oscillators. <i>Physical Review E</i> , 2007 , 75, 036218	2.4	25
56	Love Affairs and Differential Equations. <i>Mathematics Magazine</i> , 1988 , 61, 35-35	0.1	25
55	Norbert Wiener's Brain Waves. <i>Lecture Notes in Biomathematics</i> , 1994 , 122-138		24
54	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	11.5	23
53	Dynamics of one-dimensional Josephson-junction arrays. <i>Physica D: Nonlinear Phenomena</i> , 1998 , 119, 219-226	3.3	20
52	Displays on Display. <i>IEEE Computer Graphics and Applications</i> , 1984 , 4, 66-69	1.7	19
51	Evolutionary game dynamics of controlled and automatic decision-making. <i>Chaos</i> , 2015 , 25, 073120	3.3	18
50	Self-organization in Kerr-cavity-soliton formation in parametric frequency combs. <i>Physical Review A</i> , 2016 , 94,	2.6	17
49	Dynamics of a population of oscillatory and excitable elements. <i>Physical Review E</i> , 2016 , 93, 062203	2.4	16
48	Phase diagram for the Kuramoto model with van Hemmen interactions. <i>Physical Review E</i> , 2014 , 89, 012904	2.4	16
47	Discreteness-induced resonances and ac voltage amplitudes in long one-dimensional Josephson junction arrays. <i>Journal of Applied Physics</i> , 1997 , 82, 4661-4668	2.5	16
46	Evolutionary dynamics of incubation periods. <i>ELife</i> , 2017 , 6,	8.9	16
45	Synchronization as Aggregation: Cluster Kinetics of Pulse-Coupled Oscillators. <i>Physical Review Letters</i> , 2015 , 115, 064101	7.4	14
44	Volcano Transition in a Solvable Model of Frustrated Oscillators. <i>Physical Review Letters</i> , 2018 , 120, 264102	7.4	14
43	Superconducting states and depinning transitions of Josephson ladders. <i>Physical Review B</i> , 1998 , 57, 1181-1199	3.3	13
42	Resonance splitting in discrete planar arrays of Josephson junctions. <i>Journal of Applied Physics</i> , 1996 , 79, 7864-7870	2.5	13

41	Spontaneous Droplet Motion on a Periodically Compliant Substrate. <i>Langmuir</i> , 2017 , 33, 4942-4947	4	12
40	Phase coherence induced by correlated disorder. <i>Physical Review E</i> , 2016 , 93, 022219	2.4	12
39	Fitness dependence of the fixation-time distribution for evolutionary dynamics on graphs. <i>Physical Review E</i> , 2019 , 100, 012408	2.4	12
38	Delayed switching in a phase-slip model of charge-density-wave transport. <i>Physical Review B</i> , 1989 , 40, 5588-5592	3.3	12
37	Jump Bifurcation and Hysteresis in an Infinite-Dimensional Dynamical System of Coupled Spins. <i>SIAM Journal on Applied Mathematics</i> , 1990 , 50, 108-124	1.8	12
36	Conformational control of mechanical networks. <i>Nature Physics</i> , 2019 , 15, 714-720	16.2	11
35	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	2.4	11
34	Takeover times for a simple model of network infection. <i>Physical Review E</i> , 2017 , 96, 012313	2.4	10
33	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	2	10
32	The Birth of Period Three. <i>Mathematics Magazine</i> , 1995 , 68, 42	0.1	10
31	Dense networks that do not synchronize and sparse ones that do. <i>Chaos</i> , 2020 , 30, 083142	3.3	10
30	Kuramoto model with uniformly spaced frequencies: Finite-N asymptotics of the locking threshold. <i>Physical Review E</i> , 2016 , 93, 062220	2.4	9
29	Pattern Formation in Continuous and Coupled Systems. <i>The IMA Volumes in Mathematics and Its Applications</i> , 1999 ,	0.5	8
28	Comparing the locking threshold for rings and chains of oscillators. <i>Physical Review E</i> , 2016 , 94, 062203	2.4	7
27	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, 2575-604	2.1	6
26	Collective synchronisation in lattices of non-linear oscillators with randomness. <i>Journal of Physics A</i> , 1988 , 21, 4649-4649		6
25	Correlated disorder in the Kuramoto model: Effects on phase coherence, finite-size scaling, and dynamic fluctuations. <i>Chaos</i> , 2016 , 26, 103105	3.3	6
24	Frequency spirals. <i>Chaos</i> , 2016 , 26, 094804	3.3	6

23	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	11.5	5
22	The mathematical structure of the human sleep-wake cycle. <i>Journal of Biological Rhythms</i> , 1987 , 2, 317-292	3.2	4
21	Spontaneous synchronization in nature		3
20	Yeast oscillations, belousov-zhabotinsky waves, and the non-retraction theorem. <i>Mathematical Intelligencer</i> , 1985 , 7, 9-17	0.2	3
19	Estimating the torsional rigidity of DNA from supercoiling data. <i>Journal of Chemical Physics</i> , 1982 , 77, 580-581	3.9	3
18	Descendant distributions for the impact of mutant contagion on networks. <i>Physical Review Research</i> , 2020 , 2,	3.9	3
17	Designing temporal networks that synchronize under resource constraints. <i>Nature Communications</i> , 2021 , 12, 3273	17.4	3
16	Interactions of topological kinks in two coupled rings of nonlinear oscillators. <i>Physical Review B</i> , 1998 , 58, 8749-8754	3.3	2
15	Pinned states in Josephson arrays: A general stability theorem. <i>Physical Review B</i> , 1998 , 58, 5215-5218	3.3	2
14	Vortices trapped in discrete Josephson rings. <i>Physica B: Condensed Matter</i> , 1994 , 203, 490-496	2.8	2
13	Topology of zigzag chromatin. <i>Journal of Theoretical Biology</i> , 1983 , 103, 601-7	2.3	2
12	Synchronization of clocks and metronomes: A perturbation analysis based on multiple timescales. <i>Chaos</i> , 2021 , 31, 023109	3.3	2
11	The Kuramoto model on a sphere: Explaining its low-dimensional dynamics with group theory and hyperbolic geometry. <i>Chaos</i> , 2021 , 31, 093113	3.3	2
10	Synchronization Phenomena in Modelocked Parametric Frequency Combs 2014 ,		1
9	Kuramoto-Like Synchronization in Parametric Frequency Combs 2014 ,		1
8	Basins with Tentacles. <i>Physical Review Letters</i> , 2021 , 127, 194101	7.4	1
7	Sufficiently dense Kuramoto networks are globally synchronizing. <i>Chaos</i> , 2021 , 31, 073135	3.3	1
6	Coupled metronomes on a moving platform with Coulomb friction.. <i>Chaos</i> , 2022 , 32, 043119	3.3	1

- 5 Modeling the Interplay Between Seasonal Flu Outcomes and Individual Vaccination Decisions.. *Bulletin of Mathematical Biology*, **2022**, 84, 36 2.1 0
- 4 Arthur Winfree (1942-2002). *Journal of Biological Rhythms*, **2003**, 18, 95-95 3.2
- 3 . *IEEE Transactions on Applied Superconductivity*, **1995**, 5, 2698-2701 1.8
- 2 How a minority can win: Unrepresentative outcomes in a simple model of voter turnout.. *Physical Review E*, **2021**, 104, 054307 2.4
- 1 Vortex Propagation in Discrete Josephson Rings **1995**, 587-598