Sudeshna Sinha

List of Publications by Year
in descending order

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162	3,828	94433	155660
papers	citations	37	55
		h-index	g-index

165	165	165	1380
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Reliable Logic Circuit Elements that Exploit Nonlinearity in the Presence of a Noise Floor. Physical Review Letters, 2009, 102, 104101.	7.8	186
2	Dynamics Based Computation. Physical Review Letters, 1998, 81, 2156-2159.	7.8	178
3	A Noise-Assisted Reprogrammable Nanomechanical Logic Gate. Nano Letters, 2010, 10, 1168-1171.	9.1	160
4	Adaptive control in nonlinear dynamics. Physica D: Nonlinear Phenomena, 1990, 43, 118-128.	2.8	142
5	Computing with distributed chaos. Physical Review E, 1999, 60, 363-377.	2.1	86
6	Realization of reliable and flexible logic gates using noisy nonlinear circuits. Applied Physics Letters, 2009, 95, .	3.3	80
7	Synchronization in time-varying networks. Physical Review E, 2014, 90, 022812.	2.1	80
8	Generating multi-scroll chaotic attractors by thresholding. Physics Letters, Section A: General, Atomic and Solid State Physics, 2008, 372, 3234-3239.	2.1	78
9	Multiple-node basin stability in complex dynamical networks. Physical Review E, 2017, 95, 032317.	2.1	74
10	Random coupling of chaotic maps leads to spatiotemporal synchronization. Physical Review E, 2002, 66, 016209.	2.1	73
11	Time-varying multiplex network: Intralayer and interlayer synchronization. Physical Review E, 2017, 96, 062308.	2.1	70
12	Introduction to Focus Issue: Intrinsic and Designed Computation: Information Processing in Dynamical Systemsâ€"Beyond the Digital Hegemony. Chaos, 2010, 20, 037101.	2.5	69
13	Implementation of NOR Gate by a Chaotic Chua's Circuit. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2003, 13, 2669-2672.	1.7	68
14	Logical stochastic resonance. Chemical Physics, 2010, 375, 424-434.	1.9	63
15	Synthetic gene networks as potential flexible parallel logic gates. Europhysics Letters, 2011, 93, 50001.	2.0	56
16	Exploiting the effect of noise on a chemical system to obtain logic gates. Europhysics Letters, 2009, 86, 60003.	2.0	55
17	Emergence of synchronization and regularity in firing patterns in time-varying neural hypernetworks. Physical Review E, 2018, 97, 052304.	2.1	55
18	Noise-free logical stochastic resonance. Physical Review E, 2011, 84, 055201.	2.1	54

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19	Enhancement of â€œlogicalâ€•responses by noise in a bistable optical system. Physical Review E, 2011, 83, 046219.	2.1	54
20	Rapidly switched random links enhance spatiotemporal regularity. Physical Review E, 2008, 78, 066209.	2.1	53
21	Adaptive dynamics on a chaotic lattice. Physical Review Letters, 1993, 71, 2010-2013.	7.8	52
22	Evidence of universality for the May-Wigner stability theorem for random networks with local dynamics. Physical Review E, 2005, 71, 020902.	2.1	51
23	Enhanced logical stochastic resonance under periodic forcing. Communications in Nonlinear Science and Numerical Simulation, 2014, 19, 2866-2873.	3.3	49
24	Unidirectional adaptive dynamics. Physical Review E, 1994, 49, 4832-4842.	2.1	47
25	Chaogates: Morphing logic gates that exploit dynamical patterns. Chaos, 2010, 20, 037107.	2.5	45
26	Realizing logic gates with time-delayed synthetic genetic networks. Nonlinear Dynamics, 2014, 76, 431-439.	5.2	45
27	Flexible parallel implementation of logic gates using chaotic elements. Physical Review E, 2002, 65, 036216.	2.1	44
28	Experimental realization of chaos control by thresholding. Physical Review E, 2003, 68, 016210.	2.1	43
29	Nonstatistical behavior of coupled optical systems. Physical Review A, 1992, 45, 5469-5473.	2.5	42
30	Chimera States in Star Networks. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2016, 26, 1630023.	1.7	42
31	Physics-enhanced neural networks learn order and chaos. Physical Review E, 2020, 101, 062207.	2.1	42
32	Using synchronization to obtain dynamic logic gates. Physical Review E, 2007, 75, 025201.	2.1	41
33	Noise-assisted morphing of memory and logic function. Physics Letters, Section A: General, Atomic and Solid State Physics, 2012, 376, 957-962.	2.1	41
34	Order in the turbulent phase of globally coupled maps. Physica D: Nonlinear Phenomena, 1993, 63, 341-349.	2.8	39
35	Noise-Aided Logic in an Electronic Analog of Synthetic Genetic Networks. PLoS ONE, 2013, 8, e76032.	2.5	39
36	Local-to-global coupling in chaotic maps. Physical Review A, 1992, 46, 6242-6246.	2.5	38

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37	Adaptive control of spatially extended systems: Targeting spatiotemporal patterns and chaos. Physical Review E, 1998, 58, R5221-R5224.	2.1	38
38	A q-deformed nonlinear map. Physics Letters, Section A: General, Atomic and Solid State Physics, 2005, 338, 277-287.	2.1	37
39	Manipulating potential wells in Logical Stochastic Resonance to obtain XOR logic. Physics Letters, Section A: General, Atomic and Solid State Physics, 2012, 376, 930-937.	2.1	36
40	Parallel computing with extended dynamical systems. Physical Review E, 2002, 65, 036214.	2.1	35
41	Coupling induced logical stochastic resonance. Physics Letters, Section A: General, Atomic and Solid State Physics, 2018, 382, 1581-1585.	2.1	35
42	Emergence of epidemics in rapidly varying networks. Chaos, Solitons and Fractals, 2013, 54, 127-134.	5.1	34
43	Realization of the fundamental NOR gate using a chaotic circuit. Physical Review E, 2003, 68, 016205.	2.1	33
44	Dynamic transitions in small world networks: Approach to equilibrium limit. Physical Review E, 2005, 72, 052903.	2.1	33
45	Synchronization in coupled cells with activator-inhibitor pathways. Physical Review E, 2007, 75, 011906.	2.1	32
46	Chaos computing: ideas and implementations. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2008, 366, 653-664.	3.4	32
47	Persistence at the onset of spatio-temporal intermittency in coupled map lattices. Europhysics Letters, 2003, 61, 27-33.	2.0	31
48	Logic from nonlinear dynamical evolution. Physics Letters, Section A: General, Atomic and Solid State Physics, 2009, 373, 1346-1351.	2.1	28
49	Enhancement of spatiotemporal regularity in an optimal window of random coupling. Physical Review E, 2008, 78, 035201.	2.1	27
50	An efficient control algorithm for nonlinear systems. Physics Letters, Section A: General, Atomic and Solid State Physics, 1991, 156, 475-478.	2.1	26
51	Targeting chaos through adaptive control. Physical Review E, 1998, 57, R2507-R2510.	2.1	26
52	Evidence for directed percolation universality at the onset of spatiotemporal intermittency in coupled circle maps. Physical Review E, 2003, 67, 056218.	2.1	25
53	Noisy uncoupled chaotic map ensembles violate the law of large numbers. Physical Review Letters, 1992, 69, 3306-3309.	7.8	24
54	Nonstatistical behavior of higher-dimensional coupled systems. Physical Review A, 1992, 46, 3193-3197.	2.5	23

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55	Synchronization in a network of model neurons. Physical Review E, 2007, 75, 026215.	2.1	23
56	Theory of fluctuations in pseudointegrable systems. Physical Review Letters, 1993, 70, 916-919.	7.8	22
57	Adaptive dynamics on circle maps. Physics Letters, Section A: General, Atomic and Solid State Physics, 1995, 199, 365-374.	2.1	22
58	Forecasting Hamiltonian dynamics without canonical coordinates. Nonlinear Dynamics, 2021, 103, 1553-1562.	5.2	21
59	Controlling neuronal spikes. Physical Review E, 2001, 63, 056209.	2.1	20
60	Chaos computing: experimental realization of NOR gate using a simple chaotic circuit. Physics Letters, Section A: General, Atomic and Solid State Physics, 2005, 339, 39-44.	2.1	20
61	FAULT TOLERANCE AND DETECTION IN CHAOTIC COMPUTERS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2007, 17, 1955-1968.	1.7	20
62	Construction of logic gates exploiting resonance phenomena in nonlinear systems. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200238.	3.4	20
63	Asynchronous updating of coupled maps leads to synchronization. Chaos, 2000, 10, 350-358.	2.5	19
64	DESIGN OF TIME DELAYED CHAOTIC CIRCUIT WITH THRESHOLD CONTROLLER. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2011, 21, 725-735.	1.7	19
65	Robust emergent activity in dynamical networks. Physical Review E, 2006, 74, 066117.	2.1	18
66	Exploiting chaos for applications. Chaos, 2015, 25, 097615.	2.5	18
67	Explosive death in nonlinear oscillators coupled by quorum sensing. Physical Review E, 2019, 100, 032203.	2.1	18
68	CHAOS AND REGULARITY IN ADAPTIVE LATTICE DYNAMICS. International Journal of Modern Physics B, 1995, 09, 875-931.	2.0	17
69	Using thresholding at varying intervals to obtain different temporal patterns. Physical Review E, 2001, 63, 036212.	2.1	17
70	Noise tolerant spatiotemporal chaos computing. Chaos, 2014, 24, 043110.	2.5	17
71	Chaotic attractor hopping yields logic operations. PLoS ONE, 2018, 13, e0209037.	2.5	17
72	Spatiotemporal intermittency on the sandpile. Physical Review Letters, 1991, 66, 2750-2753.	7.8	16

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73	DESIGN OF THRESHOLD CONTROLLER BASED CHAOTIC CIRCUITS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2010, 20, 2185-2191.	1.7	16
74	Taming Explosive Growth through Dynamic Random Links. Scientific Reports, 2014, 4, 4308.	3.3	16
75	Emergence of extreme events in networks of parametrically coupled chaotic populations. Chaos, 2019, 29, 023131.	2.5	16
76	Targeting spatiotemporal patterns in extended systems with multiple coexisting attractors. Physical Review E, 2001, 64, 015203.	2.1	15
77	Distribution of Husimi zeros in polygonal billiards. Physical Review E, 1999, 60, 408-415.	2.1	14
78	Construction of a reconfigurable dynamic logic cell. Pramana - Journal of Physics, 2005, 64, 433-441.	1.8	14
79	Suppression of chaos through coupling to an external chaotic system. Nonlinear Dynamics, 2017, 87, 159-167.	5.2	13
80	Advent of extreme events in predator populations. Scientific Reports, 2020, 10, 10613.	3.3	13
81	Power-law persistence characterizes traveling waves in coupled circle maps with repulsive coupling. Physical Review E, 2007, 75, 066208.	2.1	12
82	Environment-induced symmetry breaking of the oscillation-death state. Physical Review E, 2018, 98, .	2.1	12
83	Suppression and revival of oscillations through time-varying interaction. Chaos, Solitons and Fractals, 2019, 118, 249-254.	5.1	12
84	Spatiotemporal consequences of relaxation time scales in threshold-coupled systems. Physical Review E, 2006, 73, 026215.	2.1	11
85	A simple nonlinear dynamical computing device. Chaos, Solitons and Fractals, 2009, 42, 809-819.	5.1	11
86	The scaling of physics-informed machine learning with data and dimensions. Chaos, Solitons and Fractals: X, 2020, 5, 100046.	2.1	11
87	EXPLOITING NONLINEAR DYNAMICS TO STORE AND PROCESS INFORMATION. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2008, 18, 1551-1559.	1.7	10
88	Revival of oscillations via common environment. Nonlinear Dynamics, 2018, 91, 2219-2225.	5.2	10
89	HOW CRUCIAL IS SMALL WORLD CONNECTIVITY FOR DYNAMICS?. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2006, 16, 2767-2775.	1.7	9
90	Nonuniversal dependence of spatiotemporal regularity on randomness in coupling connections. Physical Review E, 2008, 78, 066120.	2.1	9

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91	Small-world networks exhibit pronounced intermittent synchronization. Chaos, 2017, 27, 111101.	2.5	9
92	Transient1fnoise. Physical Review E, 1996, 53, 4509-4513.	2.1	8
93	Exploiting the controlled responses of chaotic elements to design configurable hardware. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2006, 364, 2483-2494.	3.4	8
94	Emergent patterns in interacting neuronal sub-populations. Communications in Nonlinear Science and Numerical Simulation, 2015, 22, 314-320.	3.3	8
95	Chimera states are fragile under random links. Europhysics Letters, 2019, 128, 40004.	2.0	8
96	Emergent noise-aided logic through synchronization. Physical Review E, 2021, 104, 064207.	2.1	8
97	Machine-learning potential of a single pendulum. Physical Review E, 2022, 105, .	2.1	8
98	Coupling Reduces Noise: Applying Dynamical Coupling to Reduce Local White Additive Noise. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2015, 25, 1550040.	1.7	7
99	Echo in complex networks. Physical Review E, 2020, 101, 022216.	2.1	7
100	Competitive interplay of repulsive coupling and cross-correlated noises in bistable systems. Chaos, 2021, 31, 061106.	2.5	7
101	Resilience of networks of multi-stable chaotic systems to targetted attacks. European Physical Journal B, 2020, 93, 1.	1.5	7
102	Nonsimultaneity effects in globally coupled maps. Physical Review E, 1996, 54, 6936-6939.	2.1	6
103	Consequences of nonlocal connections in networks of chaotic maps under threshold activated coupling. Physical Review E, 2004, 69, 066209.	2.1	6
104	Asynchronous updating induces order in threshold coupled systems. Physical Review E, 2007, 76, 046212.	2.1	6
105	Effect of switching links in networks of piecewise linear maps. Nonlinear Dynamics, 2015, 81, 1741-1749.	5.2	6
106	Emergence of Persistent Infection due to Heterogeneity. Scientific Reports, 2017, 7, 41582.	3.3	6
107	Are network properties consistent indicators of synchronization?. Europhysics Letters, 2017, 117, 20003.	2.0	6
108	Identifying nodal properties that are crucial for the dynamical robustness of multistable networks. Physical Review E, 2018, 98, 022314.	2.1	6

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109	Semiclassical quantization of resonant systems. Molecular Physics, 1989, 67, 335-346.	1.7	5
110	Classical resonances and an arbitrary trajectory quantization scheme for a chaotic system. Physical Review Letters, 1993, 71, 3790-3793.	7.8	5
111	Discrete Hamiltonian symmetries and semiclassical quantization. Molecular Physics, 1993, 80, 1525-1532.	1.7	5
112	Hierarchical globally coupled systems. Physical Review E, 1998, 57, 5217-5229.	2.1	5
113	A coupled map lattice model for rheological chaos in sheared nematic liquid crystals. Chaos, 2010, 20, 043123.	2.5	5
114	Noise enhanced activity in a complex network. European Physical Journal B, 2014, 87, 1.	1.5	5
115	Balance of Interactions Determines Optimal Survival in Multi-Species Communities. PLoS ONE, 2015, 10, e0145278.	2.5	5
116	Dynamic random links enhance diversity-induced coherence in strongly coupled neuronal systems. Pramana - Journal of Physics, 2015, 84, 249-256.	1.8	5
117	Harnessing tipping points for logic operations. European Physical Journal: Special Topics, 2021, 230, 3403-3409.	2.6	5
118	Nonstandard Farey Sequences in a Realistic Diode Map. Europhysics Letters, 1991, 16, 635-641.	2.0	4
119	Fluctuations in the length spectrum of pseudo-integrable billiards. Physics Letters, Section A: General, Atomic and Solid State Physics, 1993, 173, 392-394.	2.1	4
120	Roughening of spatial profiles in the presence of parametric noise. Physics Letters, Section A: General, Atomic and Solid State Physics, 1998, 245, 393-398.	2.1	4
121	Imbalance of positive and negative links induces regularity. Chaos, Solitons and Fractals, 2011, 44, 71-78.	5.1	4
122	Synthetic Computation: Chaos Computing, Logical Stochastic Resonance, and Adaptive Computing. Understanding Complex Systems, 2014, , 51-65.	0.6	4
123	Realization of morphing logic gates in a repressilator with quorum sensing feedback. Physics Letters, Section A: General, Atomic and Solid State Physics, 2014, 378, 1099-1103.	2.1	4
124	Threshold-activated transport stabilizes chaotic populations to steady states. PLoS ONE, 2017, 12, e0183251.	2.5	4
125	Synchronized Hopping Induced by Interplay of Coupling and Noise. , 2020, , 325-334.		4
126	Control and Synchronization of Chaotic Neurons Under Threshold Activated Coupling. Lecture Notes in Computer Science, 2007, , 954-962.	1.3	4

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127	Influence of the Allee effect on extreme events in coupled three-species systems. Journal of Biosciences, 2022, 47, .	1.1	4
128	Spurious spectral fluctuations due to missing levels. Physical Review A, 1992, 46, 2649-2652.	2.5	3
129	Implications of varying communication speeds in â€œgloballyâ€•coupled maps. Physical Review E, 1998, 57, 4041-4045.	2.1	3
130	Asynchronous updating of threshold-coupled chaotic neurons. Pramana - Journal of Physics, 2008, 70, 1127-1134.	1.8	3
131	Under what kind of parametric fluctuations is spatiotemporal regularity the most robust?. Pramana - Journal of Physics, 2010, 74, 895-906.	1.8	3
132	Scalable ultra-sensitive detection of heterogeneity via coupled bistable dynamics. Europhysics Letters, 2012, 98, 60004.	2.0	3
133	Cluster formation in populations of coupled chaotic neurons. European Physical Journal: Special Topics, 2013, 222, 905-915.	2.6	3
134	Effect of heterogeneity in a model of El NiÃ±o Southern Oscillations. Chaos, Solitons and Fractals, 2017, 104, 668-679.	5.1	3
135	Control of hierarchical networks by coupling to an external chaotic system. Europhysics Letters, 2019, 125, 50006.	2.0	3
136	Localized spatial distributions of disease phases yield long-term persistence of infection. Scientific Reports, 2019, 9, 20309.	3.3	3
137	Negotiating the separatrix with machine learning. Nonlinear Theory and Its Applications IEICE, 2021, 12, 134-142.	0.6	3
138	Quenching of oscillations in a liquid metal via attenuated coupling. Physical Review E, 2022, 105, L032201.	2.1	3
139	ASYNCHRONOUS UPDATING RESTORES THE LAW OF LARGE NUMBERS IN GLOBALLY COUPLED SYSTEMS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2002, 12, 663-669.	1.7	2
140	CHAOTIC NETWORKS UNDER THRESHOLDING. International Journal of Modern Physics B, 2003, 17, 5503-5524.	2.0	2
141	Noise Enhanced Logic Gates. AIP Conference Proceedings, 2011, , .	0.4	2
142	Targeting Temporal Patterns in Time-Delay Chaotic Systems. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2014, 24, 1450014.	1.7	2
143	Random links enhance the sensitivity of networks to heterogeneity. Europhysics Letters, 2015, 112, 60004.	2.0	2
144	Spatiotemporal regularity in networks with stochastically varying links. European Physical Journal B, 2015, 88, 1.	1.5	2

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145	Anticipating persistent infection. Europhysics Letters, 2018, 121, 60001.	2.0	2
146	Enhancement of extreme events through the Allee effect and its mitigation through noise in a three species system. Scientific Reports, 2021, 11, 20913.	3.3	2
147	Ill-matched timescales in coupled systems can induce oscillation suppression. Chaos, 2021, 31, 103104.	2.5	2
148	Absorption spectrum for the transition state H 3 â‰ â€”A quantum mechanical model study. Journal of Chemical Sciences, 1986, 96, 215-221.	1.5	1
149	Fluctuations in the time periods of a model chaotic system. Physical Review A, 1992, 46, 5257-5259.	2.5	1
150	Lattice dynamical models of adaptive spatio-temporal phenomena. Pramana - Journal of Physics, 1997, 48, 287-302.	1.8	1
151	Emergent organization of oscillator clusters in coupled self-regulatory chaotic maps. Pramana - Journal of Physics, 2008, 70, 1153-1164.	1.8	1
152	Regular and chaotic states in a local map description of sheared nematic liquid crystals. Physical Review E, 2008, 78, 011706.	2.1	1
153	Construction of a Chaotic Computer Chip. Understanding Complex Systems, 2009, , 3-13.	0.6	1
154	Preventing catastrophes in spatially extended systems through dynamic switching of random interactions. Pramana - Journal of Physics, 2015, 84, 217-228.	1.8	1
155	Scaling of moments in rotational inelasticity. Chemical Physics Letters, 1987, 135, 153-158.	2.6	0
156	Adaptive Dynamics on a Chaotic Lattice. Physical Review Letters, 1993, 71, 3396-3396.	7.8	0
157	Theory of Fluctuations in Pseudointegrable Systems. Physical Review Letters, 1993, 70, 2823-2823.	7.8	0
158	Reconfigurable Logic Element using a Chaotic Circuit. , 2006, , .		0
159	Exploiting Chaos for Computation. , 2006, , .		0
160	Exploiting Nonlinear Dynamics to Search for the Existence of Matches in a Database. , 2006, , .		0
161	Unraveling the phase-amplitude coupling modulation in a delay-coupled diode lasers functionality. , 2017, , .		0
162	Asymmetry induced suppression of chaos. Scientific Reports, 2020, 10, 15582.	3.3	0