

# Rajarshi Roy

## List of Publications by Year in descending order

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125  
papers

10,616  
citations

47006

47  
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31849

101  
g-index

126  
all docs

126  
docs citations

126  
times ranked

5322  
citing authors

#	ARTICLE	IF	CITATIONS
1	Observation of Stochastic Resonance in a Ring Laser. <i>Physical Review Letters</i> , 1988, 60, 2626-2629.	7.8	816
2	Communication with Chaotic Lasers. <i>Science</i> , 1998, 279, 1198-1200.	12.6	809
3	Experimental observation of chimeras in coupled-map lattices. <i>Nature Physics</i> , 2012, 8, 658-661.	16.7	515
4	Neuronal Avalanches Imply Maximum Dynamic Range in Cortical Networks at Criticality. <i>Journal of Neuroscience</i> , 2009, 29, 15595-15600.	3.6	495
5	Dynamical control of a chaotic laser: Experimental stabilization of a globally coupled system. <i>Physical Review Letters</i> , 1992, 68, 1259-1262.	7.8	490
6	Information Capacity and Transmission Are Maximized in Balanced Cortical Networks with Neuronal Avalanches. <i>Journal of Neuroscience</i> , 2011, 31, 55-63.	3.6	479
7	Experimental synchronization of chaotic lasers. <i>Physical Review Letters</i> , 1994, 72, 2009-2012.	7.8	431
8	Cluster synchronization and isolated desynchronization in complex networks with symmetries. <i>Nature Communications</i> , 2014, 5, 4079.	12.8	418
9	Fast, accurate algorithm for numerical simulation of exponentially correlated colored noise. <i>Physical Review A</i> , 1988, 38, 5938-5940.	2.5	370
10	Digital communication with synchronized chaotic lasers. <i>Optics Letters</i> , 1994, 19, 2056.	3.3	304
11	Coherence and phase dynamics of spatially coupled solid-state lasers. <i>Physical Review A</i> , 1993, 47, 4287-4296.	2.5	249
12	Observation of antiphase states in a multimode laser. <i>Physical Review Letters</i> , 1990, 65, 1749-1752.	7.8	237
13	Generation of nondiffracting Bessel beams by use of a spatial light modulator. <i>Optics Letters</i> , 2003, 28, 2183.	3.3	235
14	Optical Communication with Chaotic Waveforms. <i>Physical Review Letters</i> , 1998, 81, 3547-3550.	7.8	189
15	Maximal Variability of Phase Synchrony in Cortical Networks with Neuronal Avalanches. <i>Journal of Neuroscience</i> , 2012, 32, 1061-1072.	3.6	180
16	Complete characterization of the stability of cluster synchronization in complex dynamical networks. <i>Science Advances</i> , 2016, 2, e1501737.	10.3	174
17	Tracking unstable steady states: Extending the stability regime of a multimode laser system. <i>Physical Review Letters</i> , 1992, 69, 3169-3172.	7.8	173
18	Fast physical random number generator using amplified spontaneous emission. <i>Optics Express</i> , 2010, 18, 23584.	3.4	160

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19	Spatiotemporal Communication with Synchronized Optical Chaos. <i>Physical Review Letters</i> , 2001, 86, 5204-5207.	7.8	150
20	Detecting Phase Synchronization in a Chaotic Laser Array. <i>Physical Review Letters</i> , 2001, 87, 044101.	7.8	149
21	Consistency of Nonlinear System Response to Complex Drive Signals. <i>Physical Review Letters</i> , 2004, 93, 244102.	7.8	144
22	Measuring intense rotation and dissipation in turbulent flows. <i>Nature</i> , 2003, 421, 146-149.	27.8	140
23	Scaling Behavior of Laser Population Dynamics with Time-Delayed Coupling: Theory and Experiment. <i>Physical Review Letters</i> , 2005, 94, 088101.	7.8	124
24	Synchronization of chaos in an array of three lasers. <i>Physical Review E</i> , 1999, 59, 4036-4043.	2.1	121
25	Chaos and coherence in coupled lasers. <i>Physical Review E</i> , 1997, 55, 3865-3869.	2.1	119
26	Experimental observation of chimera and cluster states in a minimal globally coupled network. <i>Chaos</i> , 2016, 26, 094801.	2.5	116
27	Scalable parallel physical random number generator based on a superluminescent LED. <i>Optics Letters</i> , 2011, 36, 1020.	3.3	113
28	Chaos in a multimode solid-state laser system. <i>Chaos</i> , 1991, 1, 49-64.	2.5	100
29	Experimental Observations of Group Synchrony in a System of Chaotic Optoelectronic Oscillators. <i>Physical Review Letters</i> , 2013, 110, 064104.	7.8	91
30	Crowd Synchrony and Quorum Sensing in Delay-Coupled Lasers. <i>Physical Review Letters</i> , 2010, 105, 264101.	7.8	87
31	Communication with Dynamically Fluctuating States of Light Polarization. <i>Physical Review Letters</i> , 2002, 88, 097903.	7.8	81
32	Nonlinear dynamics of multiple four-wave mixing processes in a single-mode fiber. <i>Physical Review A</i> , 1991, 43, 4987-4996.	2.5	80
33	Fast intracavity polarization dynamics of an erbium-doped fiber ring laser: Inclusion of stochastic effects. <i>Physical Review A</i> , 1997, 55, 2376-2386.	2.5	80
34	Determinism and stochasticity of power-dropout events in semiconductor lasers with optical feedback. <i>Optics Letters</i> , 1995, 20, 2396.	3.3	79
35	Elimination of chaos in an intracavity-doubled Nd:YAG laser. <i>Optics Letters</i> , 1990, 15, 1141.	3.3	74
36	Complex dynamics and synchronization of delayed-feedback nonlinear oscillators. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2010, 368, 343-366.	3.4	74

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37	CHAOTIC COMMUNICATION USING TIME-DELAYED OPTICAL SYSTEMS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1999, 09, 2129-2156.	1.7	71
38	Robustness of Optimal Synchronization in Real Networks. Physical Review Letters, 2011, 107, 034102.	7.8	71
39	Modeling and Estimation of Friction, Extension, and Coupling Effects in Multisegment Continuum Robots. IEEE/ASME Transactions on Mechatronics, 2017, 22, 909-920.	5.8	63
40	The world's fastest dice. Nature Photonics, 2008, 2, 714-715.	31.4	62
41	Synchronization and communication with chaotic laser systems. Progress in Optics, 2005, , 203-341.	0.6	59
42	Transmission of linearly polarized light through a single-mode fiber with random fluctuations of birefringence. Applied Optics, 1999, 38, 3888.	2.1	55
43	Generalized Synchronization of Chaos in Identical Systems with Hidden Degrees of Freedom. Physical Review Letters, 2003, 91, 174101.	7.8	54
44	Fast polarization dynamics of an erbium-doped fiber ring laser. Optics Letters, 1996, 21, 1478.	3.3	53
45	Dynamics of Activated Escape and Its Observation in a Semiconductor Laser. Physical Review Letters, 2000, 85, 78-81.	7.8	50
46	Isochronal synchrony and bidirectional communication with delay-coupled nonlinear oscillators. Physical Review E, 2007, 75, 026205.	2.1	50
47	Recommendations and illustrations for the evaluation of photonic random number generators. APL Photonics, 2017, 2, .	5.7	49
48	Using Synchronization for Prediction of High-Dimensional Chaotic Dynamics. Physical Review Letters, 2008, 101, 154102.	7.8	48
49	Generalized Synchronization of Spatiotemporal Chaos in a Liquid Crystal Spatial Light Modulator. Physical Review Letters, 2004, 93, 084101.	7.8	44
50	Synchronization states and multistability in a ring of periodic oscillators: Experimentally variable coupling delays. Chaos, 2013, 23, 043117.	2.5	43
51	Topological Control of Synchronization Patterns: Trading Symmetry for Stability. Physical Review Letters, 2019, 122, 058301.	7.8	42
52	Dual synchronization of chaos in Mackey-Glass electronic circuits with time-delayed feedback. Physical Review E, 2007, 75, 016207.	2.1	41
53	Blowout bifurcation in a system of coupled chaotic lasers. Physical Review E, 1998, 58, 7186-7189.	2.1	39
54	Dynamical evolution of multiple four-wave-mixing processes in an optical fiber. Physical Review E, 1998, 57, 4757-4774.	2.1	35

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55	Localized Excitations in Arrays of Synchronized Laser Oscillators. <i>Physical Review Letters</i> , 2007, 98, 104101.	7.8	34
56	Controlling hyperchaos in a multimode laser model. <i>Physical Review E</i> , 1994, 50, 3453-3457.	2.1	31
57	Laser beams with embedded vortices: tools for atom optics. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2006, 23, 94.	2.1	30
58	Delayed dynamical systems: networks, chimeras and reservoir computing. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2019, 377, 20180123.	3.4	30
59	Synchronization of unidirectionally coupled Mackey-Glass analog circuits with frequency bandwidth limitations. <i>Physical Review E</i> , 2006, 74, 016211.	2.1	29
60	Adaptive synchronization of coupled chaotic oscillators. <i>Physical Review E</i> , 2009, 80, 056205.	2.1	29
61	MEMS based low cost piezoresistive microcantilever force sensor and sensor module. <i>Materials Science in Semiconductor Processing</i> , 2014, 19, 163-173.	4.0	29
62	Experiments with arbitrary networks in time-multiplexed delay systems. <i>Chaos</i> , 2017, 27, 121103.	2.5	29
63	Encoding and decoding messages with chaotic lasers. <i>Physical Review E</i> , 1997, 56, 6302-6310.	2.1	28
64	Synchronization and time shifts of dynamical patterns for mutually delay-coupled fiber ring lasers. <i>Chaos</i> , 2006, 16, 015111.	2.5	28
65	Synchronization and symmetry breaking in mutually coupled fiber lasers. <i>Physical Review E</i> , 2006, 73, 045201.	2.1	27
66	Effect of Spontaneous Emission Noise and Modulation on Semiconductor Lasers Near Threshold with Optical Feedback. <i>International Journal of Modern Physics B</i> , 2003, 17, 4123-4138.	2.0	26
67	Using machine learning to assess short term causal dependence and infer network links. <i>Chaos</i> , 2019, 29, 121104.	2.5	26
68	Observation of chaotic itinerancy in the light and carrier dynamics of a semiconductor laser with optical feedback. <i>Physical Review E</i> , 2006, 73, 026219.	2.1	25
69	Power-Law Spatial Correlations in Arrays of Locally Coupled Lasers. <i>Physical Review Letters</i> , 2004, 92, 093905.	7.8	24
70	Local conditional Lyapunov exponent characterization of consistency of dynamical response of the driven Lorenz system. <i>Physical Review E</i> , 2008, 78, 036203.	2.1	24
71	Harvesting entropy and quantifying the transition from noise to chaos in a photon-counting feedback loop. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 9258-9263.	7.1	23
72	Adding connections can hinder network synchronization of time-delayed oscillators. <i>Physical Review E</i> , 2015, 92, 022804.	2.1	23

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73	Using Bayesian optimization to guide probing of a flexible environment for simultaneous registration and stiffness mapping. , 2016, , .		23
74	Effect of injected field statistics on transient dynamics of an injection seeded laser. Optics Communications, 1990, 77, 318-324.	2.1	22
75	Delayed Mutual Coupling Dynamics of Lasers: Scaling Laws and Resonances. SIAM Journal on Applied Dynamical Systems, 2006, 5, 699-725.	1.6	22
76	Controlling Optical Chaos, Spatio-Temporal Dynamics, and Patterns. Advances in Atomic, Molecular and Optical Physics, 2007, , 615-697.	2.3	22
77	Effect of multiple time delays on intensity fluctuation dynamics in fiber ring lasers. Physical Review E, 2008, 78, 016208.	2.1	22
78	Generalized synchronization of chaos: experiments on a two-mode microchip laser with optoelectronic feedback. Physica D: Nonlinear Phenomena, 2004, 195, 244-262.	2.8	21
79	Measurement of Hurst Exponents for Semiconductor Laser Phase Dynamics. Physical Review Letters, 2005, 94, 010602.	7.8	21
80	Concurrent nonparametric estimation of organ geometry and tissue stiffness using continuous adaptive palpation. , 2016, , .		21
81	Complementary model update: A method for simultaneous registration and stiffness mapping in flexible environments. , 2016, , .		19
82	Determination of Mechanical Properties of Spatially Heterogeneous Breast Tissue Specimens Using Contact Mode Atomic Force Microscopy (AFM). Annals of Biomedical Engineering, 2014, 42, 1806-1822.	2.5	18
83	Laminar Chaos in Experiments: Nonlinear Systems with Time-Varying Delays and Noise. Physical Review Letters, 2019, 123, 154101.	7.8	18
84	Conservation law for multiple four-wave-mixing processes in a nonlinear optical medium. Physical Review A, 1994, 50, 1807-1813.	2.5	17
85	Influence of noise on chaotic laser dynamics. Physical Review E, 1997, 55, 6483-6500.	2.1	17
86	Chaotic function generator: Complex dynamics and its control in a loss-modulated Nd:YAG laser. Physical Review E, 2002, 66, 026216.	2.1	17
87	Competition between two frequencies for phase synchronization of a chaotic laser. Physical Review E, 2003, 67, 015202.	2.1	16
88	A Semi-Automated Positioning System for Contact-Mode Atomic Force Microscopy (AFM). IEEE Transactions on Automation Science and Engineering, 2013, 10, 462-465.	5.2	16
89	Bursting dynamics of a fiber laser with an injected signal. Physical Review E, 2003, 67, 036602.	2.1	15
90	Chaos down the line. Nature, 2005, 438, 298-298.	27.8	15

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91	Changing Dynamical Complexity with Time Delay in Coupled Fiber Laser Oscillators. Physical Review Letters, 2007, 99, 053905.	7.8	15
92	Critical Switching in Globally Attractive Chimeras. Physical Review X, 2020, 10, .	8.9	15
93	Controlling Chaotic Lasers. Optics and Photonics News, 1994, 5, 8.	0.5	14
94	High-speed fiber-optic polarization analyzer: measurements of the polarization dynamics of an erbium-doped fiber ring laser. Optics Communications, 1999, 164, 107-120.	2.1	14
95	Machine Learning Link Inference of Noisy Delay-Coupled Networks with Optoelectronic Experimental Tests. Physical Review X, 2021, 11, .	8.9	14
96	Statistical fluctuations in multiple four-wave mixing in a single-mode optical fiber. Physical Review A, 1991, 44, 7605-7614.	2.5	13
97	Investigation of effects of dynamics on intrinsic wrench sensing in continuum robots. , 2016, , .		13
98	Microarray-facilitated mechanical characterization of breast tissue pathology samples using contact-mode Atomic Force Microscopy (AFM). , 2010, , .		12
99	Influence of stochasticity on multiple four-wave-mixing processes in an optical fiber. Physical Review E, 2002, 66, 066609.	2.1	10
100	Hilbert phase analysis of the dynamics of a semiconductor laser with optical feedback. Physical Review E, 2003, 67, 025604.	2.1	9
101	Dynamic synchronization of a time-evolving optical network of chaotic oscillators. Chaos, 2010, 20, 043142.	2.5	9
102	Intracavity chaotic dynamics in ring lasers with an injected signal. Physics Letters, Section A: General, Atomic and Solid State Physics, 1997, 229, 362-366.	2.1	7
103	PHASE SYNCHRONIZATION IN A MODULATED CHAOTIC LASER ARRAY. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2004, 14, 3205-3216.	1.7	7
104	Probabilistic Estimation of Mechanical Properties of Biomaterials Using Atomic Force Microscopy. IEEE Transactions on Biomedical Engineering, 2014, 61, 547-556.	4.2	6
105	Laminar chaos in experiments and nonlinear delayed Langevin equations: A time series analysis toolbox for the detection of laminar chaos. Physical Review E, 2020, 101, 032213.	2.1	6
106	Using GRENOUILLE to characterize asymmetric femtosecond pulses undergoing self- and cross-phase modulation in a polarization-maintaining optical fiber. Optics Express, 2003, 11, 3063.	3.4	5
107	Experimental observation of noise-induced synchronization of bursting dynamical systems. IEEE Journal of Selected Topics in Quantum Electronics, 2004, 10, 906-910.	2.9	5
108	Functional Grading of a Transversely Isotropic Hyperelastic Model with Applications in Modeling Tricuspid and Mitral Valve Transition Regions. International Journal of Molecular Sciences, 2020, 21, 6503.	4.1	4

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109	Pulse fluctuation statistics of an actively mode-locked external-cavity semiconductor laser. Applied Physics Letters, 1992, 60, 307-309.	3.3	3
110	Characterizing intense rotation and dissipation in turbulent flows. Chaos, 2004, 14, S8-S8.	2.5	3
111	Robot-Guided Atomic Force Microscopy for Mechano-Visual Phenotyping of Cancer Specimens. Microscopy and Microanalysis, 2015, 21, 1224-1235.	0.4	3
112	Group Synchrony in an Experimental System of Delay-coupled Optoelectronic Oscillators. IEICE Proceeding Series, 2014, 1, 70-73.	0.0	3
113	Coherence, chaos and communication: Exploring and applying nonlinear laser dynamics. AIP Conference Proceedings, 2000, , .	0.4	2
114	Communicating with optical spatio-temporal chaos. , 2002, , .		2
115	A perspective on nonlinear dynamics. Pramana - Journal of Physics, 2005, 64, 307-313.	1.8	2
116	Discovering, Constructing, and Analyzing Synchronous Clusters of Oscillators in a Complex Network Using Symmetries. Advances in Dynamics, Patterns, Cognition, 2017, , 145-160.	0.3	2
117	Noise Induced Burst Synchronization in Fiber Ring Lasers. AIP Conference Proceedings, 2003, , .	0.4	1
118	Stochastic bursting due to frequency drift in an injected fibre laser. Journal of Optics B: Quantum and Semiclassical Optics, 2004, 6, S780-S785.	1.4	1
119	Synchronization, chaos and consistency. , 2007, , .		1
120	An Error-In-Variables (EIV) based Bayesian probabilistic approach to estimating cell mechanical properties using Atomic Force Microscopy. , 2012, , .		1
121	Stochastic modeling of bursting dynamics in an injected fiber laser. , 2003, , .		0
122	Dimensionality reduction and dynamical filtering: Stimulated Brillouin scattering in optical fibers. Physical Review E, 2015, 92, 022903.	2.1	0
123	Revealing Network Symmetries Using Time-Series Data. Understanding Complex Systems, 2019, , 132-140.	0.6	0
124	Synchronization patterns of an experimental ring of coupled optoelectronic oscillators. IEICE Proceeding Series, 2014, 2, 404-404.	0.0	0
125	Frequency-Modulated Time-Delayed Microwave Chaotic Oscillator. IEICE Proceeding Series, 2014, 1, 670-673.	0.0	0