# Rajarshi Roy

List of Publications by Year
in descending order



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|---|---|---|---|
| 125 papers | 10,616 citations | 47006 47 h-index | 31849 101 g-index |
| 126 all docs | 126 docs citations | 126 times ranked | 5322 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Machine Learning Link Inference of Noisy Delay-Coupled Networks with Optoelectronic Experimental Tests. Physical Review X, 2021, 11, . | 8.9 | 14 |
| 2 | 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 |
| 3 | 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 |
| 4 | Critical Switching in Globally Attractive Chimeras. Physical Review X, 2020, 10, . | 8.9 | 15 |
| 5 | Delayed dynamical systems: networks, chimeras and reservoir computing. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180123. | 3.4 | 30 |
| 6 | Laminar Chaos in Experiments: Nonlinear Systems with Time-Varying Delays and Noise. Physical Review Letters, 2019, 123, 154101. | 7.8 | 18 |
| 7 | Revealing Network Symmetries Using Time-Series Data. Understanding Complex Systems, 2019, , 132-140. | 0.6 | 0 |
| 8 | Topological Control of Synchronization Patterns: Trading Symmetry for Stability. Physical Review Letters, 2019, 122, 058301. | 7.8 | 42 |
| 9 | Using machine learning to assess short term causal dependence and infer network links. Chaos, 2019, 29, 121104. | 2.5 | 26 |
| 10 | 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 |
| 11 | 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 |
| 12 | Recommendations and illustrations for the evaluation of photonic random number generators. APL Photonics, 2017, 2, . | 5.7 | 49 |
| 13 | Experiments with arbitrary networks in time-multiplexed delay systems. Chaos, 2017, 27, 121103. | 2.5 | 29 |
| 14 | Using Bayesian optimization to guide probing of a flexible environment for simultaneous registration and stiffness mapping. , 2016, , . | | 23 |
| 15 | Complementary model update: A method for simultaneous registration and stiffness mapping in flexible environments. , 2016, , . | | 19 |
| 16 | Experimental observation of chimera and cluster states in a minimal globally coupled network. Chaos, 2016, 26, 094801. | 2.5 | 116 |
| 17 | Complete characterization of the stability of cluster synchronization in complex dynamical networks. Science Advances, 2016, 2, e1501737. | 10.3 | 174 |
| 18 | Investigation of effects of dynamics on intrinsic wrench sensing in continuum robots. , 2016, , . | | 13 |

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|---|---|---|---|
| 19 | Concurrent nonparametric estimation of organ geometry and tissue stiffness using continuous adaptive palpation. , 2016, , . | | 21 |
| 20 | Dimensionality reduction and dynamical filtering: Stimulated Brillouin scattering in optical fibers. Physical Review E, 2015, 92, 022903. | 2.1 | 0 |
| 21 | Robot-Guided Atomic Force Microscopy for Mechano-Visual Phenotyping of Cancer Specimens. Microscopy and Microanalysis, 2015, 21, 1224-1235. | 0.4 | 3 |
| 22 | Harvesting entropy and quantifying the transition from noise to chaos in a photon-counting feedback loop. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 9258-9263. | 7.1 | 23 |
| 23 | Adding connections can hinder network synchronization of time-delayed oscillators. Physical Review E, 2015, 92, 022804. | 2.1 | 23 |
| 24 | MEMS based low cost piezoresistive microcantilever force sensor and sensor module. Materials Science in Semiconductor Processing, 2014, 19, 163-173. | 4.0 | 29 |
| 25 | Probabilistic Estimation of Mechanical Properties of Biomaterials Using Atomic Force Microscopy. IEEE Transactions on Biomedical Engineering, 2014, 61, 547-556. | 4.2 | 6 |
| 26 | 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 |
| 27 | Cluster synchronization and isolated desynchronization in complex networks with symmetries. Nature Communications, 2014, 5, 4079. | 12.8 | 418 |
| 28 | Group Synchrony in an Experimental System of Delay-coupled Optoelectronic Oscillators. IEICE Proceeding Series, 2014, 1, 70-73. | 0.0 | 3 |
| 29 | Synchronization patterns of an experimental ring of coupled optoelectronic oscillators. IEICE Proceeding Series, 2014, 2, 404-404. | 0.0 | 0 |
| 30 | Frequency-Modulated Time-Delayed Microwave Chaotic Oscillator. IEICE Proceeding Series, 2014, 1, 670-673. | 0.0 | 0 |
| 31 | Synchronization states and multistability in a ring of periodic oscillators: Experimentally variable coupling delays. Chaos, 2013, 23, 043117. | 2.5 | 43 |
| 32 | 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 |
| 33 | Experimental Observations of Group Synchrony in a System of Chaotic Optoelectronic Oscillators. Physical Review Letters, 2013, 110, 064104. | 7.8 | 91 |
| 34 | Maximal Variability of Phase Synchrony in Cortical Networks with Neuronal Avalanches. Journal of Neuroscience, 2012, 32, 1061-1072. | 3.6 | 180 |
| 35 | An Error-In-Variables (EIV) based Bayesian probabilistic approach to estimating cell mechanical properties using Atomic Force Microscopy. , 2012, , . | | 1 |
| 36 | Experimental observation of chimeras in coupled-map lattices. Nature Physics, 2012, 8, 658-661. | 16.7 | 515 |

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| 37 | Scalable parallel physical random number generator based on a superluminescent LED. Optics Letters, 2011, 36, 1020. | 3.3 | 113 |
| 38 | Robustness of Optimal Synchronization in Real Networks. Physical Review Letters, 2011, 107, 034102. | 7.8 | 71 |
| 39 | Information Capacity and Transmission Are Maximized in Balanced Cortical Networks with Neuronal Avalanches. Journal of Neuroscience, 2011, 31, 55-63. | 3.6 | 479 |
| 40 | Dynamic synchronization of a time-evolving optical network of chaotic oscillators. Chaos, 2010, 20, 043142. | 2.5 | 9 |
| 41 | Complex dynamics and synchronization of delayed-feedback nonlinear oscillators. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2010, 368, 343-366. | 3.4 | 74 |
| 42 | Crowd Synchrony and Quorum Sensing in Delay-Coupled Lasers. Physical Review Letters, 2010, 105, 264101. | 7.8 | 87 |
| 43 | Fast physical random number generator using amplified spontaneous emission. Optics Express, 2010, 18, 23584. | 3.4 | 160 |
| 44 | Microarray-facilitated mechanical characterization of breast tissue pathology samples using contact-mode Atomic Force Microscopy (AFM). , 2010, , . | | 12 |
| 45 | Neuronal Avalanches Imply Maximum Dynamic Range in Cortical Networks at Criticality. Journal of Neuroscience, 2009, 29, 15595-15600. | 3.6 | 495 |
| 46 | Adaptive synchronization of coupled chaotic oscillators. Physical Review E, 2009, 80, 056205. | 2.1 | 29 |
| 47 | The world's fastest dice. Nature Photonics, 2008, 2, 714-715. | 31.4 | 62 |
| 48 | Effect of multiple time delays on intensity fluctuation dynamics in fiber ring lasers. Physical Review E, 2008, 78, 016208. | 2.1 | 22 |
| 49 | Local conditional Lyapunov exponent characterization of consistency of dynamical response of the driven Lorenz system. Physical Review E, 2008, 78, 036203. | 2.1 | 24 |
| 50 | Using Synchronization for Prediction of High-Dimensional Chaotic Dynamics. Physical Review Letters, 2008, 101, 154102. | 7.8 | 48 |
| 51 | Controlling Optical Chaos, Spatio-Temporal Dynamics, and Patterns. Advances in Atomic, Molecular and Optical Physics, 2007, , 615-697. | 2.3 | 22 |
| 52 | Synchronization, chaos and consistency. , 2007, , . | | 1 |
| 53 | Dual synchronization of chaos in Mackey-Glass electronic circuits with time-delayed feedback. Physical Review E, 2007, 75, 016207. | 2.1 | 41 |
| 54 | Isochronal synchrony and bidirectional communication with delay-coupled nonlinear oscillators. Physical Review E, 2007, 75, 026205. | 2.1 | 50 |

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| 55 | Localized Excitations in Arrays of Synchronized Laser Oscillators. Physical Review Letters, 2007, 98, 104101. | 7.8 | 34 |
| 56 | Changing Dynamical Complexity with Time Delay in Coupled Fiber Laser Oscillators. Physical Review Letters, 2007, 99, 053905. | 7.8 | 15 |
| 57 | Synchronization and time shifts of dynamical patterns for mutually delay-coupled fiber ring lasers. Chaos, 2006, 16, 015111. | 2.5 | 28 |
| 58 | Delayedâ€Mutual Coupling Dynamics of Lasers: Scaling Laws and Resonances. SIAM Journal on Applied Dynamical Systems, 2006, 5, 699-725. | 1.6 | 22 |
| 59 | Synchronization and symmetry breaking in mutually coupled fiber lasers. Physical Review E, 2006, 73, 045201. | 2.1 | 27 |
| 60 | Laser beams with embedded vortices: tools for atom optics. Journal of the Optical Society of America B: Optical Physics, 2006, 23, 94. | 2.1 | 30 |
| 61 | Synchronization of unidirectionally coupled Mackey-Glass analog circuits with frequency bandwidth limitations. Physical Review E, 2006, 74, 016211. | 2.1 | 29 |
| 62 | Observation of chaotic itinerancy in the light and carrier dynamics of a semiconductor laser with optical feedback. Physical Review E, 2006, 73, 026219. | 2.1 | 25 |
| 63 | Chaos down the line. Nature, 2005, 438, 298-298. | 27.8 | 15 |
| 64 | A perspective on nonlinear dynamics. Pramana - Journal of Physics, 2005, 64, 307-313. | 1.8 | 2 |
| 65 | Synchronization and communication with chaotic laser systems. Progress in Optics, 2005, , 203-341. | 0.6 | 59 |
| 66 | Scaling Behavior of Laser Population Dynamics with Time-Delayed Coupling: Theory and Experiment. Physical Review Letters, 2005, 94, 088101. | 7.8 | 124 |
| 67 | Measurement of Hurst Exponents for Semiconductor Laser Phase Dynamics. Physical Review Letters, 2005, 94, 010602. | 7.8 | 21 |
| 68 | 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 |
| 69 | Characterizing intense rotation and dissipation in turbulent flows. Chaos, 2004, 14, S8-S8. | 2.5 | 3 |
| 70 | Generalized Synchronization of Spatiotemporal Chaos in a Liquid Crystal Spatial Light Modulator. Physical Review Letters, 2004, 93, 084101. | 7.8 | 44 |
| 71 | Consistency of Nonlinear System Response to Complex Drive Signals. Physical Review Letters, 2004, 93, 244102. | 7.8 | 144 |
| 72 | Power-Law Spatial Correlations in Arrays of Locally Coupled Lasers. Physical Review Letters, 2004, 92, 093905. | 7.8 | 24 |

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| 73 | 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 |
| 74 | 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 |
| 75 | 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 |
| 76 | Measuring intense rotation and dissipation in turbulent flows. Nature, 2003, 421, 146-149. | 27.8 | 140 |
| 77 | Generalized Synchronization of Chaos in Identical Systems with Hidden Degrees of Freedom. Physical Review Letters, 2003, 91, 174101. | 7.8 | 54 |
| 78 | Generation of nondiffracting Bessel beams by use of a spatial light modulator. Optics Letters, 2003, 28, 2183. | 3.3 | 235 |
| 79 | 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 |
| 80 | Competition between two frequencies for phase synchronization of a chaotic laser. Physical Review E, 2003, 67, 015202. | 2.1 | 16 |
| 81 | Hilbert phase analysis of the dynamics of a semiconductor laser with optical feedback. Physical Review E, 2003, 67, 025604. | 2.1 | 9 |
| 82 | Bursting dynamics of a fiber laser with an injected signal. Physical Review E, 2003, 67, 036602. | 2.1 | 15 |
| 83 | Effect of Spontaneous Emission Noise and Modulation on Semiconductor Lasers Near Threshold with Optical Feedback. International Journal of Modern Physics B, 2003, 17, 4123-4138. | 2.0 | 26 |
| 84 | Noise Induced Burst Synchronization in Fiber Ring Lasers. AIP Conference Proceedings, 2003, , . | 0.4 | 1 |
| 85 | Stochastic modeling of bursting dynamics in an injected fiber laser. , 2003, , . | | 0 |
| 86 | Influence of stochasticity on multiple four-wave-mixing processes in an optical fiber. Physical Review E, 2002, 66, 066609. | 2.1 | 10 |
| 87 | Chaotic function generator: Complex dynamics and its control in a loss-modulated Nd:YAG laser. Physical Review E, 2002, 66, 026216. | 2.1 | 17 |
| 88 | Communication with Dynamically Fluctuating States of Light Polarization. Physical Review Letters, 2002, 88, 097903. | 7.8 | 81 |
| 89 | Communicating with optical spatio-temporal chaos. , 2002, , . | | 2 |
| 90 | Spatiotemporal Communication with Synchronized Optical Chaos. Physical Review Letters, 2001, 86, 5204-5207. | 7.8 | 150 |

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| 91 | Detecting Phase Synchronization in a Chaotic Laser Array. Physical Review Letters, 2001, 87, 044101. | 7.8 | 149 |
| 92 | Coherence, chaos and communication: Exploring and applying nonlinear laser dynamics. AIP Conference Proceedings, 2000, , . | 0.4 | 2 |
| 93 | Dynamics of Activated Escape and Its Observation in a Semiconductor Laser. Physical Review Letters, 2000, 85, 78-81. | 7.8 | 50 |
| 94 | 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 |
| 95 | Synchronization of chaos in an array of three lasers. Physical Review E, 1999, 59, 4036-4043. | 2.1 | 121 |
| 96 | 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 |
| 97 | Transmission of linearly polarized light through a single-mode fiber with random fluctuations of birefringence. Applied Optics, 1999, 38, 3888. | 2.1 | 55 |
| 98 | Communication with Chaotic Lasers. Science, 1998, 279, 1198-1200. | 12.6 | 809 |
| 99 | Optical Communication with Chaotic Waveforms. Physical Review Letters, 1998, 81, 3547-3550. | 7.8 | 189 |
| 100 | Dynamical evolution of multiple four-wave-mixing processes in an optical fiber. Physical Review E, 1998, 57, 4757-4774. | 2.1 | 35 |
| 101 | Blowout bifurcation in a system of coupled chaotic lasers. Physical Review E, 1998, 58, 7186-7189. | 2.1 | 39 |
| 102 | Encoding and decoding messages with chaotic lasers. Physical Review E, 1997, 56, 6302-6310. | 2.1 | 28 |
| 103 | Influence of noise on chaotic laser dynamics. Physical Review E, 1997, 55, 6483-6500. | 2.1 | 17 |
| 104 | Chaos and coherence in coupled lasers. Physical Review E, 1997, 55, 3865-3869. | 2.1 | 119 |
| 105 | Fast intracavity polarization dynamics of an erbium-doped fiber ring laser: Inclusion of stochastic effects. Physical Review A, 1997, 55, 2376-2386. | 2.5 | 80 |
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| 107 | Fast polarization dynamics of an erbium-doped fiber ring laser. Optics Letters, 1996, 21, 1478. | 3.3 | 53 |
| 108 | Determinism and stochasticity of power-dropout events in semiconductor lasers with optical feedback. Optics Letters, 1995, 20, 2396. | 3.3 | 79 |

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| 109 | Conservation law for multiple four-wave-mixing processes in a nonlinear optical medium. Physical Review A, 1994, 50, 1807-1813. | 2.5 | 17 |
| 110 | Experimental synchronization of chaotic lasers. Physical Review Letters, 1994, 72, 2009-2012. | 7.8 | 431 |
| 111 | Controlling hyperchaos in a multimode laser model. Physical Review E, 1994, 50, 3453-3457. | 2.1 | 31 |
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| 113 | Controlling Chaotic Lasers. Optics and Photonics News, 1994, 5, 8. | 0.5 | 14 |
| 114 | Coherence and phase dynamics of spatially coupled solid-state lasers. Physical Review A, 1993, 47, 4287-4296. | 2.5 | 249 |
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| 116 | Dynamical control of a chaotic laser: Experimental stabilization of a globally coupled system. Physical Review Letters, 1992, 68, 1259-1262. | 7.8 | 490 |
| 117 | Tracking unstable steady states: Extending the stability regime of a multimode laser system. Physical Review Letters, 1992, 69, 3169-3172. | 7.8 | 173 |
| 118 | Chaos in a multimode solidâ€state laser system. Chaos, 1991, 1, 49-64. | 2.5 | 100 |
| 119 | Statistical fluctuations in multiple four-wave mixing in a single-mode optical fiber. Physical Review A, 1991, 44, 7605-7614. | 2.5 | 13 |
| 120 | Nonlinear dynamics of multiple four-wave mixing processes in a single-mode fiber. Physical Review A, 1991, 43, 4987-4996. | 2.5 | 80 |
| 121 | Effect of injected field statistics on transient dynamics of an injection seeded laser. Optics Communications, 1990, 77, 318-324. | 2.1 | 22 |
| 122 | Observation of antiphase states in a multimode laser. Physical Review Letters, 1990, 65, 1749-1752. | 7.8 | 237 |
| 123 | Elimination of chaos in an intracavity-doubled Nd:YAG laser. Optics Letters, 1990, 15, 1141. | 3.3 | 74 |
| 124 | Observation of Stochastic Resonance in a Ring Laser. Physical Review Letters, 1988, 60, 2626-2629. | 7.8 | 816 |
| 125 | Fast, accurate algorithm for numerical simulation of exponentially correlated colored noise. Physical Review A, 1988, 38, 5938-5940. | 2.5 | 370 |