Douglas Zhou

List of Publications by Year
in descending order

54 papers	594 citations	623734 14 h-index	752698 20 g-index
54 all docs	54 docs citations	54 times ranked	518 citing authors

#	Article	IF	Citations
1	Mathematical Modeling and Analysis of Spatial Neuron Dynamics: Dendritic Integration and Beyond. Communications on Pure and Applied Mathematics, 2023, 76, 114-162.	3.1	3
2	Improved effective linearization of nonlinear SchrÃ¶dinger waves by increasing nonlinearity. Physical Review Research, 2022, 4, .	3.6	0
3	Network mechanism for insect olfaction. Cognitive Neurodynamics, 2021, 15, 103-129.	4.0	5
4	Maximum Entropy Principle Underlies Wiring Length Distribution in Brain Networks. Cerebral Cortex, 2021, 31, 4628-4641.	2.9	4
5	The extended Granger causality analysis for Hodgkinâ€"Huxley neuronal models. Chaos, 2020, 30, 103102.	2.5	2
6	A computational investigation of electrotonic coupling between pyramidal cells in the cortex. Journal of Computational Neuroscience, 2020, 48, 387-407.	1.0	3
7	Exponential Time Differencing Algorithm for Pulse-Coupled Hodgkin-Huxley Neural Networks. Frontiers in Computational Neuroscience, 2020, 14, 40.	2.1	4
8	Neural networks of different species, brain areas and states can be characterized by the probability polling state. European Journal of Neuroscience, 2020, 52, 3790-3802.	2.6	0
9	A Combined Offlineâ€"Online Algorithm for Hodgkinâ€"Huxley Neural Networks. Journal of Scientific Computing, 2020, 84, 1.	2.3	12
10	Dendritic computations captured by an effective point neuron model. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 15244-15252.	7.1	19
11	Effective dispersion in the focusing nonlinear SchrÃ¶dinger equation. Physical Review E, 2019, 100, 022215.	2.1	7
12	Modulation-resonance mechanism for surface waves in a two-layer fluid system. Journal of Fluid Mechanics, 2019, 875, 807-841.	3.4	9
13	Emergence of spatially periodic diffusive waves in small-world neuronal networks. Physical Review E, 2019, 100, 042401.	2.1	2
14	Compressive Sensing Inference of Neuronal Network Connectivity in Balanced Neuronal Dynamics. Frontiers in Neuroscience, 2019, 13, 1101.	2.8	8
15	A Role for Electrotonic Coupling Between Cortical Pyramidal Cells. Frontiers in Computational Neuroscience, 2019, 13, 33.	2.1	6
16	Determination of effective synaptic conductances using somatic voltage clamp. PLoS Computational Biology, 2019, 15, e1006871.	3.2	8
17	Maximum entropy principle analysis in network systems with short-time recordings. Physical Review E, 2019, 99, 022409.	2.1	3
18	Dynamical and Coupling Structure of Pulse-Coupled Networks in Maximum Entropy Analysis. Entropy, 2019, 21, 76.	2.2	2

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19	Balanced Active Core in Heterogeneous Neuronal Networks. Frontiers in Computational Neuroscience, 2019, 12, 109.	2.1	5
20	Mechanisms underlying contrast-dependent orientation selectivity in mouse V1. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 11619-11624.	7.1	3
21	Causal inference in nonlinear systems: Granger causality versus time-delayed mutual information. Physical Review E, 2018, 97, 052216.	2.1	27
22	Effects of Firing Variability on Network Structures with Spike-Timing-Dependent Plasticity. Frontiers in Computational Neuroscience, 2018, 12, 1.	2.1	32
23	The Dynamics of Balanced Spiking Neuronal Networks Under Poisson Drive Is Not Chaotic. Frontiers in Computational Neuroscience, 2018, 12, 47.	2.1	6
24	The characterization of hippocampal theta-driving neurons â€” a time-delayed mutual information approach. Scientific Reports, 2017, 7, 5637.	3.3	7
25	Spike-Triggered Regression for Synaptic Connectivity Reconstruction in Neuronal Networks. Frontiers in Computational Neuroscience, 2017, 11, 101.	2.1	3
26	A dynamical state underlying the second order maximum entropy principle in neuronal networks. Communications in Mathematical Sciences, 2017, 15, 665-692.	1.0	6
27	Stochastic linearization of turbulent dynamics of dispersive waves in equilibrium and non-equilibrium state. New Journal of Physics, 2016, 18, 083028.	2.9	7
28	Improved Compressive Sensing of Natural Scenes Using Localized Random Sampling. Scientific Reports, 2016, 6, 31976.	3.3	11
29	Granger causality analysis with nonuniform sampling and its application to pulse-coupled nonlinear dynamics. Physical Review E, 2016, 93, 042217.	2.1	0
30	Compressive sensing reconstruction of feed-forward connectivity in pulse-coupled nonlinear networks. Physical Review E, 2016, 93, 060201.	2.1	9
31	Efficient image processing via compressive sensing of integrate-and-fire neuronal network dynamics. Neurocomputing, 2016, 171, 1313-1322.	5.9	5
32	Low-rank network decomposition reveals structural characteristics of small-world networks. Physical Review E, 2015, 92, 062822.	2.1	15
33	A Novel Characterization of Amalgamated Networks in Natural Systems. Scientific Reports, 2015, 5, 10611.	3.3	3
34	Analysis of the dendritic integration of excitatory and inhibitory inputs using cable models. Communications in Mathematical Sciences, 2015, 13, 565-575.	1.0	5
35	Analysis of sampling artifacts on the Granger causality analysis for topology extraction of neuronal dynamics. Frontiers in Computational Neuroscience, 2014, 8, 75.	2.1	12
36	Reliability of the Granger causality inference. New Journal of Physics, 2014, 16, 043016.	2.9	5

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37	Bilinearity in Spatiotemporal Integration of Synaptic Inputs. PLoS Computational Biology, 2014, 10, e1004014.	3.2	11
38	Sparsity and Compressed Coding in Sensory Systems. PLoS Computational Biology, 2014, 10, e1003793.	3.2	23
39	Renormalized dispersion relations ofÎ²-Fermi-Pasta-Ulam chains in equilibrium and nonequilibrium states. Physical Review E, 2014, 90, 032925.	2.1	8
40	Network dynamics for optimal compressive-sensing input-signal recovery. Physical Review E, 2014, 90, 042908.	2.1	5
41	Distribution of correlated spiking events in a population-based approach for Integrate-and-Fire networks. Journal of Computational Neuroscience, 2014, 36, 279-295.	1.0	14
42	A coarse-grained framework for spiking neuronal networks: between homogeneity and synchrony. Journal of Computational Neuroscience, 2014, 37, 81-104.	1.0	14
43	Granger Causality Network Reconstruction of Conductance-Based Integrate-and-Fire Neuronal Systems. PLoS ONE, 2014, 9, e87636.	2.5	26
44	Causal and Structural Connectivity of Pulse-Coupled Nonlinear Networks. Physical Review Letters, 2013, 111, 054102.	7.8	35
45	Spatiotemporal dynamics of neuronal population response in the primary visual cortex. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 9517-9522.	7.1	26
46	Phenomenological Incorporation of Nonlinear Dendritic Integration Using Integrate-and-Fire Neuronal Frameworks. PLoS ONE, 2013, 8, e53508.	2.5	14
47	Coarse-grained event tree analysis for quantifying Hodgkin-Huxley neuronal network dynamics. Journal of Computational Neuroscience, 2012, 32, 55-72.	1.0	0
48	Spectrum of Lyapunov exponents of non-smooth dynamical systems of integrate-and-fire type. Journal of Computational Neuroscience, 2010, 28, 229-245.	1.0	24
49	Pseudo-Lyapunov exponents and predictability of Hodgkin-Huxley neuronal network dynamics. Journal of Computational Neuroscience, 2010, 28, 247-266.	1.0	16
50	Dynamics of current-based, Poisson driven, integrate-and-fire neuronal networks. Communications in Mathematical Sciences, 2010, 8, 541-600.	1.0	36
51	Network-induced chaos in integrate-and-fire neuronal ensembles. Physical Review E, 2009, 80, 031918.	2.1	15
52	Library-based numerical reduction of the Hodgkinâ€“Huxley neuron for network simulation. Journal of Computational Neuroscience, 2009, 27, 369-390.	1.0	17
53	Numerical simulation of phase separation coupled with crystallization. Journal of Chemical Physics, 2008, 129, 154901.	3.0	16
54	Modified models of polymer phase separation. Physical Review E, 2006, 73, 061801.	2.1	36