Fred Wolf

List of Publications by Year
in descending order

101 papers	4,286 citations	101543 36 h-index	133252 59 g-index
114 all docs	114 docs citations	114 times ranked	4185 citing authors

#	Article	IF	Citations
1	Unique features of action potential initiation in cortical neurons. Nature, 2006, 440, 1060-1063.	27.8	321
2	Flexible information routing by transient synchrony. Nature Neuroscience, 2017, 20, 1014-1022.	14.8	232
3	Universality in the Evolution of Orientation Columns in the Visual Cortex. Science, 2010, 330, 1113-1116.	12.6	174
4	Dynamic Effective Connectivity of Inter-Areal Brain Circuits. PLoS Computational Biology, 2012, 8, e1002438.	3.2	133
5	Erythropoietin enhances hippocampal long-term potentiation and memory. BMC Biology, 2008, 6, 37.	3.8	129
6	Developmental refinement of hair cell synapses tightens the coupling of Ca²⁺influx to exocytosis. EMBO Journal, 2014, 33, n/a-n/a.	7.8	127
7	Coexistence of Regular and Irregular Dynamics in Complex Networks of Pulse-Coupled Oscillators. Physical Review Letters, 2002, 89, 258701.	7.8	116
8	Olfactory Coding with Patterns of Response Latencies. Neuron, 2010, 67, 872-884.	8.1	116
9	Spontaneous pinwheel annihilation during visual development. Nature, 1998, 395, 73-78.	27.8	112
10	Topological Speed Limits to Network Synchronization. Physical Review Letters, 2004, 92, 074101.	7.8	100
11	Prevalence of Unstable Attractors in Networks of Pulse-Coupled Oscillators. Physical Review Letters, 2002, 89, 154105.	7.8	98
12	Complexin-I Is Required for High-Fidelity Transmission at the Endbulb of Held Auditory Synapse. Journal of Neuroscience, 2009, 29, 7991-8004.	3.6	96
13	Signatures of synchrony in pairwise count correlations. Frontiers in Computational Neuroscience, 2010, 4, 1.	2.1	91
14	Tipping the Scales: Peptide-Dependent Dysregulation of Neural Circuit Dynamics in Alzheimerâ€™s Disease. Neuron, 2020, 107, 417-435.	8.1	90
15	EF-hand protein Ca ²⁺ buffers regulate Ca ²⁺ influx and exocytosis in sensory hair cells. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E1028-37.	7.1	88
16	Ultrafast Population Encoding by Cortical Neurons. Journal of Neuroscience, 2011, 31, 12171-12179.	3.6	87
17	Dynamical Entropy Production in Spiking Neuron Networks in the Balanced State. Physical Review Letters, 2010, 105, 268104.	7.8	83
18	Uniquantal Release through a Dynamic Fusion Pore Is a Candidate Mechanism of Hair Cell Exocytosis. Neuron, 2014, 83, 1389-1403.	8.1	81

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19	Breaking Synchrony by Heterogeneity in Complex Networks. Physical Review Letters, 2004, 92, 074103.	7.8	75
20	Correlations and Synchrony in Threshold Neuron Models. Physical Review Letters, 2010, 104, 058102.	7.8	73
21	Long Chaotic Transients in Complex Networks. Physical Review Letters, 2004, 93, 244103.	7.8	72
22	Fast Computations in Cortical Ensembles Require Rapid Initiation of Action Potentials. Journal of Neuroscience, 2013, 33, 2281-2292.	3.6	69
23	Ultrafast optogenetic stimulation of the auditory pathway by targetingâ€optimized Chronos. EMBO Journal, 2018, 37, .	7.8	68
24	Probing the Mechanism of Exocytosis at the Hair Cell Ribbon Synapse. Journal of Neuroscience, 2007, 27, 12933-12944.	3.6	66
25	Role of sodium channel subtype in action potential generation by neocortical pyramidal neurons. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E7184-E7192.	7.1	63
26	Forces directing germ-band extension in Drosophila embryos. Mechanisms of Development, 2017, 144, 11-22.	1.7	62
27	Genetic Influence on Quantitative Features of Neocortical Architecture. Journal of Neuroscience, 2002, 22, 7206-7217.	3.6	61
28	Action Potential Onset Dynamics and the Response Speed of Neuronal Populations. Journal of Computational Neuroscience, 2005, 18, 297-309.	1.0	60
29	The simplest problem in the collective dynamics of neural networks: is synchrony stable?. Nonlinearity, 2008, 21, 1579-1599.	1.4	57
30	Characterizing Vocal Repertoiresâ€"Hard vs. Soft Classification Approaches. PLoS ONE, 2015, 10, e0125785.	2.5	56
31	The layout of orientation and ocular dominance domains in area 17 of strabismic cats. European Journal of Neuroscience, 1998, 10, 2629-2643.	2.6	54
32	Symmetry, Multistability, and Long-Range Interactions in Brain Development. Physical Review Letters, 2005, 95, 208701.	7.8	54
33	Phagocyte-mediated synapse removal in cortical neuroinflammation is promoted by local calcium accumulation. Nature Neuroscience, 2021, 24, 355-367.	14.8	49
34	Controlling the oscillation phase through precisely timed closed-loop optogenetic stimulation: a computational study. Frontiers in Neural Circuits, 2013, 7, 49.	2.8	48
35	Distinct Mechanisms of Over-Representation of Landmarks and Rewards in the Hippocampus. Cell Reports, 2020, 32, 107864.	6.4	45
36	Unstable attractors induce perpetual synchronization and desynchronization. Chaos, 2003, 13, 377-387.	2.5	42

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37	Ultrafast population coding and axo-somatic compartmentalization. PLoS Computational Biology, 2022, 18, e1009775.	3.2	42
38	The pattern of ocular dominance columns in cat primary visual cortex: intra- and interindividual variability of column spacing and its dependence on genetic background. European Journal of Neuroscience, 2003, 18, 3251-3266.	2.6	39
39	Speed of synchronization in complex networks of neural oscillators: Analytic results based on Random Matrix Theory. Chaos, 2006, 16, 015108.	2.5	39
40	Dynamic Flux Tubes Form Reservoirs of Stability in Neuronal Circuits. Physical Review X, 2012, 2, .	8.9	39
41	Dynamical models of cortical circuits. Current Opinion in Neurobiology, 2014, 25, 228-236.	4.2	38
42	An axon initial segment is required for temporal precision in action potential encoding by neuronal populations. Science Advances, 2018, 4, eaau8621.	10.3	38
43	A Small Fraction of Strongly Cooperative Sodium Channels Boosts Neuronal Encoding of High Frequencies. PLoS ONE, 2012, 7, e37629.	2.5	34
44	Organization of the visual cortex. Nature, 1996, 382, 306-306.	27.8	30
45	Response to Comment on â€œUniversality in the Evolution of Orientation Columns in the Visual Cortexâ€. Science, 2012, 336, 413-413.	12.6	30
46	Spike Onset Dynamics and Response Speed in Neuronal Populations. Physical Review Letters, 2011, 106, 088102.	7.8	29
47	Imaging Astrocyte Activity. Science, 2008, 320, 1597-1599.	12.6	27
48	Formation of field discontinuities and islands in visual cortical maps. Biological Cybernetics, 1994, 70, 525-531.	1.3	26
49	Spike Correlations â€" What Can They Tell About Synchrony?. Frontiers in Neuroscience, 2011, 5, 68.	2.8	25
50	<i>In vivo</i> optochemical control of cell contractility at singleâ€cell resolution. EMBO Reports, 2019, 20, e47755.	4.5	22
51	Self-organization and the selection of pinwheel density in visual cortical development. New Journal of Physics, 2008, 10, 015009.	2.9	21
52	Using imaging photoplethysmography for heart rate estimation in non-human primates. PLoS ONE, 2018, 13, e0202581.	2.5	21
53	Orientation Preference Maps in Microcebus murinus Reveal Size-Invariant Design Principles in Primate Visual Cortex. Current Biology, 2021, 31, 733-741.e7.	3.9	21
54	Interareal coordination of columnar architectures during visual cortical development. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 17205-17210.	7.1	20

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55	The determinants of the onset dynamics of action potentials in a computational model. Neuroscience, 2010, 167, 1070-1090.	2.3	19
56	Hodgkin and Huxley model â€" still standing? (Reply). Nature, 2007, 445, E2-E3.	27.8	18
57	Representation of Dynamical Stimuli in Populations of Threshold Neurons. PLoS Computational Biology, 2011, 7, e1002239.	3.2	18
58	Universality in visual cortical pattern formation. Journal of Physiology (Paris), 2003, 97, 253-264.	2.1	17
59	Local topographic influences on vision restoration hot spots after brain damage. Restorative Neurology and Neuroscience, 2013, 31, 787-803.	0.7	17
60	Onset Dynamics of Action Potentials in Rat Neocortical Neurons and Identified Snail Neurons: Quantification of the Difference. PLoS ONE, 2008, 3, e1962.	2.5	15
61	Coverage, continuity, and visual cortical architecture. Neural Systems & Circuits, 2011, 1, 17.	1.8	15
62	The glucosyltransferase Xiantuan of the endoplasmic reticulum specifically affects E-Cadherin expression and is required for gastrulation movements in Drosophila. Developmental Biology, 2014, 390, 208-220.	2.0	15
63	Random Wiring, Ganglion Cell Mosaics, and the Functional Architecture of the Visual Cortex. PLoS Computational Biology, 2015, 11, e1004602.	3.2	15
64	A reanalysis of â€œTwo types of asynchronous activity in networks of excitatory and inhibitory spiking neuronsâ€ F1000Research, 2016, 5, 2043.	1.6	15
65	Coordinated Optimization of Visual Cortical Maps (I) Symmetry-based Analysis. PLoS Computational Biology, 2012, 8, e1002466.	3.2	13
66	Optogenetic stimulation effectively enhances intrinsically generated network synchrony. Frontiers in Neural Circuits, 2013, 7, 167.	2.8	13
67	Can Retinal Ganglion Cell Dipoles Seed Iso-Orientation Domains in the Visual Cortex?. PLoS ONE, 2014, 9, e86139.	2.5	12
68	Growing neuronal islands on multi-electrode arrays using an accurate positioning-Î¼CP device. Journal of Neuroscience Methods, 2016, 257, 194-203.	2.5	12
69	Dynamic Gain Analysis Reveals Encoding Deficiencies in Cortical Neurons That Recover from Hypoxia-Induced Spreading Depolarizations. Journal of Neuroscience, 2019, 39, 7790-7800.	3.6	12
70	Complete Firing-Rate Response of Neurons with Complex Intrinsic Dynamics. PLoS Computational Biology, 2015, 11, e1004636.	3.2	12
71	Theory of ocular dominance pattern formation. Physical Review E, 1999, 59, 6977-6993.	2.1	10
72	Random waves in the brain: Symmetries and defect generation in the visual cortex. European Physical Journal: Special Topics, 2007, 145, 137-157.	2.6	10

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73	Action potential initiation in a multi-compartmental model with cooperatively gating Na channels in the axon initial segment. Journal of Computational Neuroscience, 2015, 39, 63-75.	1.0	10
74	Spatial clustering of orientation preference in primary visual cortex of the large rodent agouti. IScience, 2021, 24, 101882.	4.1	10
75	The prevalence of colinear contours in the real world. Neurocomputing, 2001, 38-40, 1335-1339.	5.9	9
76	Dynamical response properties of a canonical model for type-I membranes. Neurocomputing, 2005, 65-66, 421-428.	5.9	9
77	Logic gates come to life. Nature Physics, 2008, 4, 905-906.	16.7	9
78	Pinwheel Stabilization by Ocular Dominance Segregation. Physical Review Letters, 2009, 102, 208101.	7.8	9
79	Coordinated Optimization of Visual Cortical Maps (II) Numerical Studies. PLoS Computational Biology, 2012, 8, e1002756.	3.2	8
80	Emergence and suppression of cooperation by action visibility in transparent games. PLoS Computational Biology, 2020, 16, e1007588.	3.2	7
81	Impact of membrane bistability on dynamical response of neuronal populations. Physical Review E, 2015, 92, 032726.	2.1	6
82	Punctuated evolution of visual cortical circuits? Evidence from the large rodent Dasyprocta leporina, and the tiny primate Microcebus murinus. Current Opinion in Neurobiology, 2021, 71, 110-118.	4.2	6
83	Theory of non-classical receptive field phenomena in the visual cortex. Neurocomputing, 1999, 26-27, 367-374.	5.9	4
84	Quantifying the variability of patterns of orientation domains in the visual cortex of cats. Neurocomputing, 2000, 32-33, 415-423.	5.9	4
85	Network influences on cortical plasticity. E-Neuroforum, 2012, 18, .	0.1	4
86	Theta activity paradoxically boosts gamma and ripple frequency sensitivity in prefrontal interneurons. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	4
87	Pattern selection, pinwheel stability and the geometry of visual space. BMC Neuroscience, 2009, 10, .	1.9	3
88	Geometry of orientation preference map determines nonclassical receptive field properties. Lecture Notes in Computer Science, 1997, , 231-236.	1.3	2
89	Single cell dynamics determine strength of chaos in collective network dynamics. BMC Neuroscience, 2011, 12, .	1.9	2
90	Statistical mechanics of spike events underlying phase space partitioning and sequence codes in large-scale models of neural circuits. Physical Review E, 2019, 99, 052402.	2.1	2

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91	Focus on Heart and Mind. New Journal of Physics, 2008, 10, 015002.	2.9	2
92	Features of chaotic activity in a balanced network of Type II neuronal oscillators. BMC Neuroscience, 2012, 13, .	1.9	1
93	Evolutionary Successful Strategies in a Transparent iterated Prisonerâ€™s Dilemma. Lecture Notes in Computer Science, 2019, , 204-219.	1.3	1
94	Pattern formation in the developing visual cortex. , 1999, , 1-29.		0
95	Sehen Verwandte die Welt Ãhnlich?. Biologie in Unserer Zeit, 2003, 33, 218-218.	0.2	0
96	Pinwheel crystallization in a dimension reduction model of visual cortical development. BMC Neuroscience, 2009, 10, .	1.9	0
97	Representation of dynamical stimuli in threshold neuron models. BMC Neuroscience, 2011, 12, .	1.9	0
98	Der Einfluss weitreichender Netzwerke auf die PlastizitÃt der GroÃŸhirnrinde. E-Neuroforum, 2012, 18, 214-221.	0.1	0
99	Dynamical entropy production in cortical circuits with different network topologies. BMC Neuroscience, 2013, 14, .	1.9	0
100	Modeling inner hair cell ribbon synapses: response heterogeneity and efficiency of sound encoding in an idealized biophysical model. BMC Neuroscience, 2013, 14, .	1.9	0
101	Editorial overview: Evolution of brains and computation. Current Opinion in Neurobiology, 2021, 71, iii-viii.	4.2	0