Maxim Bazhenov

List of Publications by Year
in descending order

84	4,416	136740	128067
papers	citations	32 h-index	60 g-index

93	93	93	3805
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Model of Thalamocortical Slow-Wave Sleep Oscillations and Transitions to Activated States. Journal of Neuroscience, 2002, 22, 8691-8704.	1.7	428
2	Model of Transient Oscillatory Synchronization in the Locust Antennal Lobe. Neuron, 2001, 30, 553-567.	3.8	219
3	Potassium Dynamics in the Epileptic Cortex: New Insights on an Old Topic. Neuroscientist, 2008, 14, 422-433.	2.6	167
4	Corticothalamic Feedback Controls Sleep Spindle Duration In Vivo. Journal of Neuroscience, 2011, 31, 9124-9134.	1.7	167
5	Homeostatic Synaptic Plasticity Can Explain Post-traumatic Epileptogenesis in Chronically Isolated Neocortex. Cerebral Cortex, 2005, 15, 834-845.	1.6	155
6	Ionic Dynamics Mediate Spontaneous Termination of Seizures and Postictal Depression State. Journal of Neuroscience, 2011, 31, 8870-8882.	1.7	154
7	The Impact of Cortical Deafferentation on the Neocortical Slow Oscillation. Journal of Neuroscience, 2014, 34, 5689-5703.	1.7	151
8	Model of Cellular and Network Mechanisms for Odor-Evoked Temporal Patterning in the Locust Antennal Lobe. Neuron, 2001, 30, 569-581.	3.8	137
9	Heterosynaptic Plasticity. Neuroscientist, 2014, 20, 483-498.	2.6	125
10	Coupling of Thalamocortical Sleep Oscillations Are Important for Memory Consolidation in Humans. PLoS ONE, 2015, 10, e0144720.	1.1	113
11	Network Bistability Mediates Spontaneous Transitions between Normal and Pathological Brain States. Journal of Neuroscience, 2010, 30, 10734-10743.	1.7	104
12	Coexistence of tonic firing and bursting in cortical neurons. Physical Review E, 2006, 74, 031922.	0.8	98
13	Adaptive regulation of sparseness by feedforward inhibition. Nature Neuroscience, 2007, 10, 1176-1184.	7.1	92
14	Cellular and Network Models for Intrathalamic Augmenting Responses During 10-Hz Stimulation. Journal of Neurophysiology, 1998, 79, 2730-2748.	0.9	91
15	Slow State Transitions of Sustained Neural Oscillations by Activity-Dependent Modulation of Intrinsic Excitability. Journal of Neuroscience, 2006, 26, 6153-6162.	1.7	91
16	Interactions between Core and Matrix Thalamocortical Projections in Human Sleep Spindle Synchronization. Journal of Neuroscience, 2012, 32, 5250-5263.	1.7	89
17	Cortical hyperpolarization-activated depolarizing current takes part in the generation of focal paroxysmal activities. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 9533-9537.	3.3	85
18	Fast Odor Learning Improves Reliability of Odor Responses in the Locust Antennal Lobe. Neuron, 2005, 46, 483-492.	3.8	84

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19	Pathological Effect of Homeostatic Synaptic Scaling on Network Dynamics in Diseases of the Cortex. Journal of Neuroscience, 2008, 28, 1709-1720.	1.7	83
20	Interneuronâ€mediated inhibition synchronizes neuronal activity during slow oscillation. Journal of Physiology, 2012, 590, 3987-4010.	1.3	83
21	Synaptic Mechanisms of Memory Consolidation during Sleep Slow Oscillations. Journal of Neuroscience, 2016, 36, 4231-4247.	1.7	83
22	Homeostatic role of heterosynaptic plasticity: models and experiments. Frontiers in Computational Neuroscience, 2015, 9, 89.	1.2	78
23	Computational models of neuron-astrocyte interaction in epilepsy. Frontiers in Computational Neuroscience, 2012, 6, 58.	1.2	76
24	Cellular and neurochemical basis of sleep stages in the thalamocortical network. ELife, 2016, 5, .	2.8	73
25	Heterosynaptic Plasticity Prevents Runaway Synaptic Dynamics. Journal of Neuroscience, 2013, 33, 15915-15929.	1.7	69
26	Biological underpinnings for lifelong learning machines. Nature Machine Intelligence, 2022, 4, 196-210.	8.3	62
27	Electrogenic properties of the Na⁺/K⁺ATPase control transitions between normal and pathological brain states. Journal of Neurophysiology, 2015, 113, 3356-3374.	0.9	60
28	A Computational Framework for Understanding Decision Making through Integration of Basic Learning Rules. Journal of Neuroscience, 2013, 33, 5686-5697.	1.7	59
29	Differential roles of sleep spindles and sleep slow oscillations in memory consolidation. PLoS Computational Biology, 2018, 14, e1006322.	1.5	56
30	Origin of slow spontaneous resting-state neuronal fluctuations in brain networks. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 6858-6863.	3.3	56
31	Hippocampal CA1 Ripples as Inhibitory Transients. PLoS Computational Biology, 2016, 12, e1004880.	1.5	47
32	Using the Structure of Inhibitory Networks to Unravel Mechanisms of Spatiotemporal Patterning. Neuron, 2011, 69, 373-386.	3.8	41
33	Feedback stabilizes propagation of synchronous spiking in cortical neural networks. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 2545-2550.	3.3	39
34	Learning Modifies Odor Mixture Processing to Improve Detection of Relevant Components. Journal of Neuroscience, 2015, 35, 179-197.	1.7	35
35	Oscillations and Synchrony in Large-scale Cortical Network Models. Journal of Biological Physics, 2008, 34, 279-299.	0.7	34
36	Feed-Forward versus Feedback Inhibition in a Basic Olfactory Circuit. PLoS Computational Biology, 2015, 11, e1004531.	1.5	34

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37	Role of network dynamics in shaping spike timing reliability. Physical Review E, 2005, 72, 041903.	0.8	32
38	Non-homogeneous extracellular resistivity affects the current-source density profiles of upâ€“down state oscillations. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 3802-3819.	1.6	32
39	Pattern of trauma determines the threshold for epileptic activity in a model of cortical deafferentation. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 15402-15407.	3.3	32
40	Replay in Deep Learning: Current Approaches and Missing Biological Elements. Neural Computation, 2021, 33, 1-44.	1.3	32
41	Can sleep protect memories from catastrophic forgetting?. ELife, 2020, 9, .	2.8	31
42	Coupling of autonomic and central events during sleep benefits declarative memory consolidation. Neurobiology of Learning and Memory, 2019, 157, 139-150.	1.0	29
43	Ionic and synaptic mechanisms of seizure generation and epileptogenesis. Neurobiology of Disease, 2019, 130, 104485.	2.1	28
44	Topological basis of epileptogenesis in a model of severe cortical trauma. Journal of Neurophysiology, 2011, 106, 1933-1942.	0.9	27
45	Stimulation Augments Spike Sequence Replay and Memory Consolidation during Slow-Wave Sleep. Journal of Neuroscience, 2020, 40, 811-824.	1.7	27
46	Partial Breakdown of Input Specificity of STDP at Individual Synapses Promotes New Learning. Journal of Neuroscience, 2016, 36, 8842-8855.	1.7	26
47	Synchronization of Isolated Downstates (K-Complexes) May Be Caused by Cortically-Induced Disruption of Thalamic Spindling. PLoS Computational Biology, 2014, 10, e1003855.	1.5	25
48	Modeling of Age-Dependent Epileptogenesis by Differential Homeostatic Synaptic Scaling. Journal of Neuroscience, 2015, 35, 13448-13462.	1.7	25
49	Role of KCC2-dependent potassium efflux in 4-Aminopyridine-induced Epileptiform synchronization. Neurobiology of Disease, 2018, 109, 137-147.	2.1	25
50	Thalamocortical and intracortical laminar connectivity determines sleep spindle properties. PLoS Computational Biology, 2018, 14, e1006171.	1.5	23
51	Circuit mechanisms of hippocampal reactivation during sleep. Neurobiology of Learning and Memory, 2019, 160, 98-107.	1.0	22
52	A Spiking Network Model of Decision Making Employing Rewarded STDP. PLoS ONE, 2014, 9, e90821.	1.1	22
53	Excitatory Local Interneurons Enhance Tuning of Sensory Information. PLoS Computational Biology, 2012, 8, e1002563.	1.5	21
54	Adenosine Shifts Plasticity Regimes between Associative and Homeostatic by Modulating Heterosynaptic Changes. Journal of Neuroscience, 2017, 37, 1439-1452.	1.7	20

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55	Selective recruitment of cortical neurons by electrical stimulation. PLoS Computational Biology, 2019, 15, e1007277.	1.5	20
56	Bidirectional Interaction of Hippocampal Ripples and Cortical Slow Waves Leads to Coordinated Spiking Activity During NREM Sleep. Cerebral Cortex, 2021, 31, 324-340.	1.6	20
57	Forward and Back: Motifs of Inhibition in Olfactory Processing. Neuron, 2010, 67, 357-358.	3.8	18
58	Top-Down Inputs Enhance Orientation Selectivity in Neurons of the Primary Visual Cortex during Perceptual Learning. PLoS Computational Biology, 2014, 10, e1003770.	1.5	18
59	Structured networks support sparse traveling waves in rodent somatosensory cortex. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 5277-5282.	3.3	18
60	Age dependency of trauma-induced neocortical epileptogenesis. Frontiers in Cellular Neuroscience, 2013, 7, 154.	1.8	17
61	New class of reduced computationally efficient neuronal models for large-scale simulations of brain dynamics. Journal of Computational Neuroscience, 2018, 44, 1-24.	0.6	17
62	Divide and Conquer: Functional Segregation of Synaptic Inputs by Astrocytic Microdomains Could Alleviate Paroxysmal Activity Following Brain Trauma. PLoS Computational Biology, 2013, 9, e1002856.	1.5	14
63	Classification of odorants across layers in locust olfactory pathway. Journal of Neurophysiology, 2016, 115, 2303-2316.	0.9	14
64	Computer simulations of stimulus dependent state switching in basic circuits of bursting neurons. Physical Review E, 1998, 58, 6418-6430.	0.8	13
65	Synaptic inhibition controls transient oscillatory synchronization in a model of the insect olfactory system. Frontiers in Neuroengineering, 2012, 5, 7.	4.8	13
66	Differential Covariance: A New Class of Methods to Estimate Sparse Connectivity from Neural Recordings. Neural Computation, 2017, 29, 2581-2632.	1.3	13
67	Multi-layer network utilizing rewarded spike time dependent plasticity to learn a foraging task. PLoS Computational Biology, 2017, 13, e1005705.	1.5	13
68	Optimality of sparse olfactory representations is not affected by network plasticity. PLoS Computational Biology, 2020, 16, e1007461.	1.5	13
69	Dynamics of epileptiform activity in mouse hippocampal slices. Journal of Biological Physics, 2011, 37, 347-360.	0.7	12
70	Novelty detection in early olfactory processing of the honey bee, Apis mellifera. PLoS ONE, 2022, 17, e0265009.	1.1	10
71	Differential effects of adaptation on odor discrimination. Journal of Neurophysiology, 2018, 120, 171-185.	0.9	9
72	Using Biophysical Models to Understand the Effect of tDCS on Neurorehabilitation: Searching for Optimal Covariates to Enhance Poststroke Recovery. Frontiers in Neurology, 2017, 8, 58.	1.1	7

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73	The complex ecosystem in non small cell lung cancer invasion. PLoS Computational Biology, 2018, 14, e1006131.	1.5	7
74	<scp>NMDA</scp> receptors promote hippocampal sharpâ€wave ripples and the associated coactivity of <scp>CA1</scp> pyramidal cells. Hippocampus, 2020, 30, 1356-1370.	0.9	6
75	Simulating human sleep spindle MEG and EEG from ion channel and circuit level dynamics. Journal of Neuroscience Methods, 2019, 316, 46-57.	1.3	5
76	Linking dynamics of the inhibitory network to the input structure. Journal of Computational Neuroscience, 2016, 41, 367-391.	0.6	4
77	Characterizing Concentration-Dependent Neural Dynamics of 4-Aminopyridine-Induced Epileptiform Activity. Epilepsy Journal, 2018, 04, .	0.1	4
78	Computational model of brain-stem circuit for state-dependent control of hypoglossal motoneurons. Journal of Neurophysiology, 2018, 120, 296-305.	0.9	4
79	Large time step discrete-time modeling of sharp wave activity in hippocampal area CA3. Communications in Nonlinear Science and Numerical Simulation, 2019, 72, 162-175.	1.7	4
80	Differential Covariance: A New Method to Estimate Functional Connectivity in fMRI. Neural Computation, 2020, 32, 2389-2421.	1.3	4
81	Network Models of Frequency Modulated Sweep Detection. PLoS ONE, 2014, 9, e115196.	1.1	4
82	Delayed onset of symptoms through feedback interference in chronic cancers. Convergent Science Physical Oncology, 2016, 2, 045002.	2.6	2
83	A computational study of suppression of sharp wave ripple complexes by controlling calcium and gap junctions in pyramidal cells. Bioengineered, 2021, 12, 2603-2615.	1.4	2
84	Learning-Induced Sequence Reactivation During Sharp-Wave Ripples: A Computational Study. Association for Women in Mathematics Series, 2018, , 173-204.	0.1	2