

# Maxim Bazhenov

## List of Publications by Year in descending order

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Version: 2024-02-01

84  
papers

4,416  
citations

136740

32  
h-index

128067

60  
g-index

93  
all docs

93  
docs citations

93  
times ranked

3805  
citing authors

#	ARTICLE	IF	CITATIONS
1	Novelty detection in early olfactory processing of the honey bee, <i>Apis mellifera</i> . <i>PLoS ONE</i> , 2022, 17, e0265009.	1.1	10
2	Biological underpinnings for lifelong learning machines. <i>Nature Machine Intelligence</i> , 2022, 4, 196-210.	8.3	62
3	Replay in Deep Learning: Current Approaches and Missing Biological Elements. <i>Neural Computation</i> , 2021, 33, 1-44.	1.3	32
4	A computational study of suppression of sharp wave ripple complexes by controlling calcium and gap junctions in pyramidal cells. <i>Bioengineered</i> , 2021, 12, 2603-2615.	1.4	2
5	Bidirectional Interaction of Hippocampal Ripples and Cortical Slow Waves Leads to Coordinated Spiking Activity During NREM Sleep. <i>Cerebral Cortex</i> , 2021, 31, 324-340.	1.6	20
6	Stimulation Augments Spike Sequence Replay and Memory Consolidation during Slow-Wave Sleep. <i>Journal of Neuroscience</i> , 2020, 40, 811-824.	1.7	27
7	Differential Covariance: A New Method to Estimate Functional Connectivity in fMRI. <i>Neural Computation</i> , 2020, 32, 2389-2421.	1.3	4
8	<scp>NMDA</scp> receptors promote hippocampal sharp wave ripples and the associated coactivity of <scp>CA1</scp> pyramidal cells. <i>Hippocampus</i> , 2020, 30, 1356-1370.	0.9	6
9	Optimality of sparse olfactory representations is not affected by network plasticity. <i>PLoS Computational Biology</i> , 2020, 16, e1007461.	1.5	13
10	Can sleep protect memories from catastrophic forgetting?. <i>ELife</i> , 2020, 9, .	2.8	31
11	Selective recruitment of cortical neurons by electrical stimulation. <i>PLoS Computational Biology</i> , 2019, 15, e1007277.	1.5	20
12	Large time step discrete-time modeling of sharp wave activity in hippocampal area CA3. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2019, 72, 162-175.	1.7	4
13	Ionic and synaptic mechanisms of seizure generation and epileptogenesis. <i>Neurobiology of Disease</i> , 2019, 130, 104485.	2.1	28
14	Coupling of autonomic and central events during sleep benefits declarative memory consolidation. <i>Neurobiology of Learning and Memory</i> , 2019, 157, 139-150.	1.0	29
15	Simulating human sleep spindle MEG and EEG from ion channel and circuit level dynamics. <i>Journal of Neuroscience Methods</i> , 2019, 316, 46-57.	1.3	5
16	Circuit mechanisms of hippocampal reactivation during sleep. <i>Neurobiology of Learning and Memory</i> , 2019, 160, 98-107.	1.0	22
17	New class of reduced computationally efficient neuronal models for large-scale simulations of brain dynamics. <i>Journal of Computational Neuroscience</i> , 2018, 44, 1-24.	0.6	17
18	Structured networks support sparse traveling waves in rodent somatosensory cortex. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 5277-5282.	3.3	18

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19	Role of KCC2-dependent potassium efflux in 4-Aminopyridine-induced Epileptiform synchronization. <i>Neurobiology of Disease</i> , 2018, 109, 137-147.	2.1	25
20	Characterizing Concentration-Dependent Neural Dynamics of 4-Aminopyridine-Induced Epileptiform Activity. <i>Epilepsy Journal</i> , 2018, 04, .	0.1	4
21	Differential effects of adaptation on odor discrimination. <i>Journal of Neurophysiology</i> , 2018, 120, 171-185.	0.9	9
22	Thalamocortical and intracortical laminar connectivity determines sleep spindle properties. <i>PLoS Computational Biology</i> , 2018, 14, e1006171.	1.5	23
23	Differential roles of sleep spindles and sleep slow oscillations in memory consolidation. <i>PLoS Computational Biology</i> , 2018, 14, e1006322.	1.5	56
24	Computational model of brain-stem circuit for state-dependent control of hypoglossal motoneurons. <i>Journal of Neurophysiology</i> , 2018, 120, 296-305.	0.9	4
25	Origin of slow spontaneous resting-state neuronal fluctuations in brain networks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 6858-6863.	3.3	56
26	The complex ecosystem in non small cell lung cancer invasion. <i>PLoS Computational Biology</i> , 2018, 14, e1006131.	1.5	7
27	Learning-Induced Sequence Reactivation During Sharp-Wave Ripples: A Computational Study. <i>Association for Women in Mathematics Series</i> , 2018, , 173-204.	0.1	2
28	Adenosine Shifts Plasticity Regimes between Associative and Homeostatic by Modulating Heterosynaptic Changes. <i>Journal of Neuroscience</i> , 2017, 37, 1439-1452.	1.7	20
29	Differential Covariance: A New Class of Methods to Estimate Sparse Connectivity from Neural Recordings. <i>Neural Computation</i> , 2017, 29, 2581-2632.	1.3	13
30	Using Biophysical Models to Understand the Effect of tDCS on Neurorehabilitation: Searching for Optimal Covariates to Enhance Poststroke Recovery. <i>Frontiers in Neurology</i> , 2017, 8, 58.	1.1	7
31	Multi-layer network utilizing rewarded spike time dependent plasticity to learn a foraging task. <i>PLoS Computational Biology</i> , 2017, 13, e1005705.	1.5	13
32	Delayed onset of symptoms through feedback interference in chronic cancers. <i>Convergent Science Physical Oncology</i> , 2016, 2, 045002.	2.6	2
33	Classification of odorants across layers in locust olfactory pathway. <i>Journal of Neurophysiology</i> , 2016, 115, 2303-2316.	0.9	14
34	Synaptic Mechanisms of Memory Consolidation during Sleep Slow Oscillations. <i>Journal of Neuroscience</i> , 2016, 36, 4231-4247.	1.7	83
35	Linking dynamics of the inhibitory network to the input structure. <i>Journal of Computational Neuroscience</i> , 2016, 41, 367-391.	0.6	4
36	Partial Breakdown of Input Specificity of STDP at Individual Synapses Promotes New Learning. <i>Journal of Neuroscience</i> , 2016, 36, 8842-8855.	1.7	26

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37	Hippocampal CA1 Ripples as Inhibitory Transients. PLoS Computational Biology, 2016, 12, e1004880.	1.5	47
38	Cellular and neurochemical basis of sleep stages in the thalamocortical network. ELife, 2016, 5, .	2.8	73
39	Homeostatic role of heterosynaptic plasticity: models and experiments. Frontiers in Computational Neuroscience, 2015, 9, 89.	1.2	78
40	Feed-Forward versus Feedback Inhibition in a Basic Olfactory Circuit. PLoS Computational Biology, 2015, 11, e1004531.	1.5	34
41	Modeling of Age-Dependent Epileptogenesis by Differential Homeostatic Synaptic Scaling. Journal of Neuroscience, 2015, 35, 13448-13462.	1.7	25
42	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
43	Learning Modifies Odor Mixture Processing to Improve Detection of Relevant Components. Journal of Neuroscience, 2015, 35, 179-197.	1.7	35
44	Electrogenic properties of the Na <sup>+</sup> /K <sup>+</sup> ATPase control transitions between normal and pathological brain states. Journal of Neurophysiology, 2015, 113, 3356-3374.	0.9	60
45	Coupling of Thalamocortical Sleep Oscillations Are Important for Memory Consolidation in Humans. PLoS ONE, 2015, 10, e0144720.	1.1	113
46	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
47	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
48	Heterosynaptic Plasticity. Neuroscientist, 2014, 20, 483-498.	2.6	125
49	The Impact of Cortical Deafferentation on the Neocortical Slow Oscillation. Journal of Neuroscience, 2014, 34, 5689-5703.	1.7	151
50	A Spiking Network Model of Decision Making Employing Rewarded STDP. PLoS ONE, 2014, 9, e90821.	1.1	22
51	Network Models of Frequency Modulated Sweep Detection. PLoS ONE, 2014, 9, e115196.	1.1	4
52	Heterosynaptic Plasticity Prevents Runaway Synaptic Dynamics. Journal of Neuroscience, 2013, 33, 15915-15929.	1.7	69
53	A Computational Framework for Understanding Decision Making through Integration of Basic Learning Rules. Journal of Neuroscience, 2013, 33, 5686-5697.	1.7	59
54	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

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55	Age dependency of trauma-induced neocortical epileptogenesis. <i>Frontiers in Cellular Neuroscience</i> , 2013, 7, 154.	1.8	17
56	Interactions between Core and Matrix Thalamocortical Projections in Human Sleep Spindle Synchronization. <i>Journal of Neuroscience</i> , 2012, 32, 5250-5263.	1.7	89
57	Excitatory Local Interneurons Enhance Tuning of Sensory Information. <i>PLoS Computational Biology</i> , 2012, 8, e1002563.	1.5	21
58	Computational models of neuron-astrocyte interaction in epilepsy. <i>Frontiers in Computational Neuroscience</i> , 2012, 6, 58.	1.2	76
59	Synaptic inhibition controls transient oscillatory synchronization in a model of the insect olfactory system. <i>Frontiers in Neuroengineering</i> , 2012, 5, 7.	4.8	13
60	Interneuron-mediated inhibition synchronizes neuronal activity during slow oscillation. <i>Journal of Physiology</i> , 2012, 590, 3987-4010.	1.3	83
61	Using the Structure of Inhibitory Networks to Unravel Mechanisms of Spatiotemporal Patterning. <i>Neuron</i> , 2011, 69, 373-386.	3.8	41
62	Topological basis of epileptogenesis in a model of severe cortical trauma. <i>Journal of Neurophysiology</i> , 2011, 106, 1933-1942.	0.9	27
63	Non-homogeneous extracellular resistivity affects the current-source density profiles of up- and down state oscillations. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2011, 369, 3802-3819.	1.6	32
64	Dynamics of epileptiform activity in mouse hippocampal slices. <i>Journal of Biological Physics</i> , 2011, 37, 347-360.	0.7	12
65	Ionic Dynamics Mediate Spontaneous Termination of Seizures and Postictal Depression State. <i>Journal of Neuroscience</i> , 2011, 31, 8870-8882.	1.7	154
66	Corticothalamic Feedback Controls Sleep Spindle Duration In Vivo. <i>Journal of Neuroscience</i> , 2011, 31, 9124-9134.	1.7	167
67	Pattern of trauma determines the threshold for epileptic activity in a model of cortical deafferentation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 15402-15407.	3.3	32
68	Network Bistability Mediates Spontaneous Transitions between Normal and Pathological Brain States. <i>Journal of Neuroscience</i> , 2010, 30, 10734-10743.	1.7	104
69	Forward and Back: Motifs of Inhibition in Olfactory Processing. <i>Neuron</i> , 2010, 67, 357-358.	3.8	18
70	Oscillations and Synchrony in Large-scale Cortical Network Models. <i>Journal of Biological Physics</i> , 2008, 34, 279-299.	0.7	34
71	Pathological Effect of Homeostatic Synaptic Scaling on Network Dynamics in Diseases of the Cortex. <i>Journal of Neuroscience</i> , 2008, 28, 1709-1720.	1.7	83
72	Potassium Dynamics in the Epileptic Cortex: New Insights on an Old Topic. <i>Neuroscientist</i> , 2008, 14, 422-433.	2.6	167

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73	Adaptive regulation of sparseness by feedforward inhibition. <i>Nature Neuroscience</i> , 2007, 10, 1176-1184.	7.1	92
74	Coexistence of tonic firing and bursting in cortical neurons. <i>Physical Review E</i> , 2006, 74, 031922.	0.8	98
75	Slow State Transitions of Sustained Neural Oscillations by Activity-Dependent Modulation of Intrinsic Excitability. <i>Journal of Neuroscience</i> , 2006, 26, 6153-6162.	1.7	91
76	Homeostatic Synaptic Plasticity Can Explain Post-traumatic Epileptogenesis in Chronically Isolated Neocortex. <i>Cerebral Cortex</i> , 2005, 15, 834-845.	1.6	155
77	Fast Odor Learning Improves Reliability of Odor Responses in the Locust Antennal Lobe. <i>Neuron</i> , 2005, 46, 483-492.	3.8	84
78	Role of network dynamics in shaping spike timing reliability. <i>Physical Review E</i> , 2005, 72, 041903.	0.8	32
79	Cortical hyperpolarization-activated depolarizing current takes part in the generation of focal paroxysmal activities. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002, 99, 9533-9537.	3.3	85
80	Model of Thalamocortical Slow-Wave Sleep Oscillations and Transitions to Activated States. <i>Journal of Neuroscience</i> , 2002, 22, 8691-8704.	1.7	428
81	Model of Cellular and Network Mechanisms for Odor-Evoked Temporal Patterning in the Locust Antennal Lobe. <i>Neuron</i> , 2001, 30, 569-581.	3.8	137
82	Model of Transient Oscillatory Synchronization in the Locust Antennal Lobe. <i>Neuron</i> , 2001, 30, 553-567.	3.8	219
83	Computer simulations of stimulus dependent state switching in basic circuits of bursting neurons. <i>Physical Review E</i> , 1998, 58, 6418-6430.	0.8	13
84	Cellular and Network Models for Intrathalamic Augmenting Responses During 10-Hz Stimulation. <i>Journal of Neurophysiology</i> , 1998, 79, 2730-2748.	0.9	91