Maxim Volgushev

List of Publications by Year
in descending order

61 papers	3,448 citations	172457 29 h-index	149698 56 g-index
63 all docs	63 docs citations	63 times ranked	3230 citing authors

#	Article	IF	Citations
1	Mechanism of Pacemaker Activity in Zebrafish DC2/4 Dopaminergic Neurons. Journal of Neuroscience, 2021, 41, 4141-4157.	3.6	4
2	Altered Heterosynaptic Plasticity Impairs Visual Discrimination Learning in Adenosine A1 Receptor Knock-Out Mice. Journal of Neuroscience, 2021, 41, 4631-4640.	3.6	11
3	When cats need to see to step accurately?. Journal of Physiology, 2021, , .	2.9	4
4	Synaptic Plasticity in Cortical Inhibitory Neurons: What Mechanisms May Help to Balance Synaptic Weight Changes?. Frontiers in Cellular Neuroscience, 2020, 14, 204.	3.7	21
5	Distinct Heterosynaptic Plasticity in Fast Spiking and Non-Fast-Spiking Inhibitory Neurons in Rat Visual Cortex. Journal of Neuroscience, 2019, 39, 6865-6878.	3.6	16
6	Very low concentrations of ethanol suppress excitatory synaptic transmission in rat visual cortex. European Journal of Neuroscience, 2017, 45, 1333-1342.	2.6	2
7	Adenosine Shifts Plasticity Regimes between Associative and Homeostatic by Modulating Heterosynaptic Changes. Journal of Neuroscience, 2017, 37, 1439-1452.	3.6	20
8	Encoding of High Frequencies Improves with Maturation of Action Potential Generation in Cultured Neocortical Neurons. Frontiers in Cellular Neuroscience, 2017, 11, 28.	3.7	10
9	Impaired Fear Extinction Due to a Deficit in Ca2+ Influx Through L-Type Voltage-Gated Ca2+ Channels in Mice Deficient for Tenascin-C. Frontiers in Integrative Neuroscience, 2017, 11, 16.	2.1	9
10	Estimating short-term synaptic plasticity from pre- and postsynaptic spiking. PLoS Computational Biology, 2017, 13, e1005738.	3.2	34
11	Neural spike-timing patterns vary with sound shape and periodicity in three auditory cortical fields. Journal of Neurophysiology, 2016, 115, 1886-1904.	1.8	26
12	Partial Breakdown of Input Specificity of STDP at Individual Synapses Promotes New Learning. Journal of Neuroscience, 2016, 36, 8842-8855.	3.6	26
13	Cortical Specializations Underlying Fast Computations. Neuroscientist, 2016, 22, 145-164.	3.5	12
14	Adenosine effects on inhibitory synaptic transmission and excitationâ€"inhibition balance in the rat neocortex. Journal of Physiology, 2015, 593, 825-841.	2.9	21
15	Homeostatic role of heterosynaptic plasticity: models and experiments. Frontiers in Computational Neuroscience, 2015, 9, 89.	2.1	78
16	Identifying and Tracking Simulated Synaptic Inputs from Neuronal Firing: Insights from In Vitro Experiments. PLoS Computational Biology, 2015, 11, e1004167.	3.2	21
17	Advantages and Limitations of the Use of Optogenetic Approach in Studying Fast-Scale Spike Encoding. PLoS ONE, 2015, 10, e0122286.	2.5	16
18	Injection of Fully-Defined Signal Mixtures: A Novel High-Throughput Tool to Study Neuronal Encoding and Computations. PLoS ONE, 2014, 9, e109928.	2.5	8

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19	Heterosynaptic Plasticity. Neuroscientist, 2014, 20, 483-498.	3.5	125
20	Modulation of synaptic transmission by adenosine in layer 2/3 of the rat visual cortex in vitro. Neuroscience, 2014, 260, 171-184.	2.3	22
21	Energyâ€efficient encoding by shifting spikes in neocortical neurons. European Journal of Neuroscience, 2013, 38, 3181-3188.	2.6	10
22	Heterosynaptic Plasticity Prevents Runaway Synaptic Dynamics. Journal of Neuroscience, 2013, 33, 15915-15929.	3.6	69
23	Fast Computations in Cortical Ensembles Require Rapid Initiation of Action Potentials. Journal of Neuroscience, 2013, 33, 2281-2292.	3.6	69
24	A Small Fraction of Strongly Cooperative Sodium Channels Boosts Neuronal Encoding of High Frequencies. PLoS ONE, 2012, 7, e37629.	2.5	34
25	Heterosynaptic plasticity induced by intracellular tetanization in layer 2/3 pyramidal neurons in rat auditory cortex. Journal of Physiology, 2012, 590, 2253-2271.	2.9	27
26	Ultrafast Population Encoding by Cortical Neurons. Journal of Neuroscience, 2011, 31, 12171-12179.	3.6	87
27	Long-range correlation of the membrane potential in neocortical neurons during slow oscillation. Progress in Brain Research, 2011, 193, 181-199.	1.4	35
28	Properties of Slow Oscillation during Slow-Wave Sleep and Anesthesia in Cats. Journal of Neuroscience, 2011, 31, 14998-15008.	3.6	201
29	Spike Correlations â€“ What Can They Tell About Synchrony?. Frontiers in Neuroscience, 2011, 5, 68.	2.8	25
30	Modulation of the amplitude of Î³-band activity by stimulus phase enhances signal encoding. European Journal of Neuroscience, 2011, 33, 1223-1239.	2.6	3
31	Local action for global vision. Journal of Physiology, 2011, 589, 3419-3420.	2.9	0
32	Correlations and Synchrony in Threshold Neuron Models. Physical Review Letters, 2010, 104, 058102.	7.8	73
33	Signatures of synchrony in pairwise count correlations. Frontiers in Computational Neuroscience, 2010, 4, 1.	2.1	91
34	Origin of Active States in Local Neocortical Networks during Slow Sleep Oscillation. Cerebral Cortex, 2010, 20, 2660-2674.	2.9	246
35	The determinants of the onset dynamics of action potentials in a computational model. Neuroscience, 2010, 167, 1070-1090.	2.3	19
36	Heterosynaptic plasticity in the neocortex. Experimental Brain Research, 2009, 199, 377-390.	1.5	46

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37	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
38	Detection of Active and Silent States in Neocortical Neurons from the Field Potential Signal during Slow-Wave Sleep. Cerebral Cortex, 2007, 17, 400-414.	2.9	144
39	Hodgkin and Huxley model â€" still standing? (Reply). Nature, 2007, 445, E2-E3.	27.8	18
40	Unique features of action potential initiation in cortical neurons. Nature, 2006, 440, 1060-1063.	27.8	321
41	Precise Long-Range Synchronization of Activity and Silence in Neocortical Neurons during Slow-Wave Sleep. Journal of Neuroscience, 2006, 26, 5665-5672.	3.6	283
42	Adaptation at Synaptic Connections to Layer 2/3 Pyramidal Cells in Rat Visual Cortex. Journal of Neurophysiology, 2005, 94, 363-376.	1.8	20
43	Probability of Transmitter Release at Neocortical Synapses at Different Temperatures. Journal of Neurophysiology, 2004, 92, 212-220.	1.8	94
44	Response selectivity and Î³-frequency fluctuations of the membrane potential in visual cortical neurons. Neurocomputing, 2004, 58-60, 957-963.	5.9	3
45	Dependence of calcium influx in neocortical cells on temporal structure of depolarization, number of spikes, and blockade of NMDA receptors. Journal of Neuroscience Research, 2004, 76, 481-487.	2.9	10
46	Nitric oxide synthase in rat visual cortex: an immunohistochemical study. Brain Research Protocols, 2004, 13, 57-67.	1.6	21
47	Î³-Frequency fluctuations of the membrane potential and response selectivity in visual cortical neurons. European Journal of Neuroscience, 2003, 17, 1768-1776.	2.6	40
48	Independence of visuotopic representation and orientation map in the visual cortex of the cat. European Journal of Neuroscience, 2003, 18, 957-968.	2.6	35
49	A novel mechanism of response selectivity of neurons in cat visual cortex. Journal of Physiology, 2002, 540, 307-320.	2.9	31
50	Comparison of the selectivity of postsynaptic potentials and spike responses in cat visual cortex. European Journal of Neuroscience, 2000, 12, 257-263.	2.6	54
51	Retrograde signalling with nitric oxide at neocortical synapses. European Journal of Neuroscience, 2000, 12, 4255-4267.	2.6	53
52	Membrane properties and spike generation in rat visual cortical cells during reversible cooling. Journal of Physiology, 2000, 522, 59-76.	2.9	136
53	Synaptic transmission in the neocortex during reversible cooling. Neuroscience, 2000, 98, 9-22.	2.3	96
54	NMDA receptor blockade prevents LTD, but not LTP induction by intracellular tetanization. NeuroReport, 1999, 10, 3869-3874.	1.2	6

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55	Modification of discharge patterns of neocortical neurons by induced oscillations of the membrane potential. Neuroscience, 1998, 83, 15-25.	2.3	152
56	Multiple mechanisms underlying the orientation selectivity of visual cortical neurones. Trends in Neurosciences, 1996, 19, 272-277.	8.6	134
57	All-or-none Excitatory Postsynaptic Potentials in the Rat Visual Cortex. European Journal of Neuroscience, 1995, 7, 1751-1760.	2.6	47
58	Dynamics of the orientation tuning of postsynaptic potentials in the cat visual cortex. Visual Neuroscience, 1995, 12, 621-628.	1.0	61
59	Neurophysiological analysis of long-term potentiation in mammalian brain. Behavioural Brain Research, 1995, 66, 45-52.	2.2	47
60	Induction of LTP and LTD in visual cortex neurones by intracellular tetanization. NeuroReport, 1994, 5, 2069-2072.	1.2	29
61	Excitation and inhibition in orientation selectivity of cat visual cortex neurons revealed by whole-cell recordings <i>in vivo</i>. Visual Neuroscience, 1993, 10, 1151-1155.	1.0	77