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	Unique features of action potential initiation in cortical neurons. Nature, 2006, 440, 1060-1063.	27.8	321
2	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
3	Origin of Active States in Local Neocortical Networks during Slow Sleep Oscillation. Cerebral Cortex, 2010, 20, 2660-2674.	2.9	246
4	Properties of Slow Oscillation during Slow-Wave Sleep and Anesthesia in Cats. Journal of Neuroscience, 2011, 31, 14998-15008.	3.6	201
5	Modification of discharge patterns of neocortical neurons by induced oscillations of the membrane potential. Neuroscience, 1998, 83, 15-25.	2.3	152
6	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
7	Membrane properties and spike generation in rat visual cortical cells during reversible cooling. Journal of Physiology, 2000, 522, 59-76.	2.9	136
8	Multiple mechanisms underlying the orientation selectivity of visual cortical neurones. Trends in Neurosciences, 1996, 19, 272-277.	8.6	134
9	Heterosynaptic Plasticity. Neuroscientist, 2014, 20, 483-498.	3.5	125
10	Synaptic transmission in the neocortex during reversible cooling. Neuroscience, 2000, 98, 9-22.	2.3	96
11	Probability of Transmitter Release at Neocortical Synapses at Different Temperatures. Journal of Neurophysiology, 2004, 92, 212-220.	1.8	94
12	Signatures of synchrony in pairwise count correlations. Frontiers in Computational Neuroscience, 2010, 4, 1.	2.1	91
13	Ultrafast Population Encoding by Cortical Neurons. Journal of Neuroscience, 2011, 31, 12171-12179.	3.6	87
14	Homeostatic role of heterosynaptic plasticity: models and experiments. Frontiers in Computational Neuroscience, 2015, 9, 89.	2.1	78
15	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
16	Correlations and Synchrony in Threshold Neuron Models. Physical Review Letters, 2010, 104, 058102.	7.8	73
17	Heterosynaptic Plasticity Prevents Runaway Synaptic Dynamics. Journal of Neuroscience, 2013, 33, 15915-15929.	3.6	69
18	Fast Computations in Cortical Ensembles Require Rapid Initiation of Action Potentials. Journal of Neuroscience, 2013, 33, 2281-2292.	3.6	69

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19	Dynamics of the orientation tuning of postsynaptic potentials in the cat visual cortex. Visual Neuroscience, 1995, 12, 621-628.	1.0	61
20	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
21	Retrograde signalling with nitric oxide at neocortical synapses. European Journal of Neuroscience, 2000, 12, 4255-4267.	2.6	53
22	All-or-none Excitatory Postsynaptic Potentials in the Rat Visual Cortex. European Journal of Neuroscience, 1995, 7, 1751-1760.	2.6	47
23	Neurophysiological analysis of long-term potentiation in mammalian brain. Behavioural Brain Research, 1995, 66, 45-52.	2.2	47
24	Heterosynaptic plasticity in the neocortex. Experimental Brain Research, 2009, 199, 377-390.	1.5	46
25	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
26	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
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	A Small Fraction of Strongly Cooperative Sodium Channels Boosts Neuronal Encoding of High Frequencies. PLoS ONE, 2012, 7, e37629.	2.5	34
29	Estimating short-term synaptic plasticity from pre- and postsynaptic spiking. PLoS Computational Biology, 2017, 13, e1005738.	3.2	34
30	A novel mechanism of response selectivity of neurons in cat visual cortex. Journal of Physiology, 2002, 540, 307-320.	2.9	31
31	Induction of LTP and LTD in visual cortex neurones by intracellular tetanization. NeuroReport, 1994, 5, 2069-2072.	1.2	29
32	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
33	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
34	Partial Breakdown of Input Specificity of STDP at Individual Synapses Promotes New Learning. Journal of Neuroscience, 2016, 36, 8842-8855.	3.6	26
35	Spike Correlations â€" What Can They Tell About Synchrony?. Frontiers in Neuroscience, 2011, 5, 68.	2.8	25
36	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

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37	Nitric oxide synthase in rat visual cortex: an immunohistochemical study. Brain Research Protocols, 2004, 13, 57-67.	1.6	21
38	Adenosine effects on inhibitory synaptic transmission and excitationâ€“inhibition balance in the rat neocortex. Journal of Physiology, 2015, 593, 825-841.	2.9	21
39	Identifying and Tracking Simulated Synaptic Inputs from Neuronal Firing: Insights from In Vitro Experiments. PLoS Computational Biology, 2015, 11, e1004167.	3.2	21
40	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
41	Adaptation at Synaptic Connections to Layer 2/3 Pyramidal Cells in Rat Visual Cortex. Journal of Neurophysiology, 2005, 94, 363-376.	1.8	20
42	Adenosine Shifts Plasticity Regimes between Associative and Homeostatic by Modulating Heterosynaptic Changes. Journal of Neuroscience, 2017, 37, 1439-1452.	3.6	20
43	The determinants of the onset dynamics of action potentials in a computational model. Neuroscience, 2010, 167, 1070-1090.	2.3	19
44	Hodgkin and Huxley model â€" still standing? (Reply). Nature, 2007, 445, E2-E3.	27.8	18
45	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
46	Advantages and Limitations of the Use of Optogenetic Approach in Studying Fast-Scale Spike Encoding. PLoS ONE, 2015, 10, e0122286.	2.5	16
47	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
48	Cortical Specializations Underlying Fast Computations. Neuroscientist, 2016, 22, 145-164.	3.5	12
49	Altered Heterosynaptic Plasticity Impairs Visual Discrimination Learning in Adenosine A1 Receptor Knock-Out Mice. Journal of Neuroscience, 2021, 41, 4631-4640.	3.6	11
50	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
51	Energyâ€efficient encoding by shifting spikes in neocortical neurons. European Journal of Neuroscience, 2013, 38, 3181-3188.	2.6	10
52	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
53	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
54	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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55	NMDA receptor blockade prevents LTD, but not LTP induction by intracellular tetanization. NeuroReport, 1999, 10, 3869-3874.	1.2	6
56	Mechanism of Pacemaker Activity in Zebrafish DC2/4 Dopaminergic Neurons. Journal of Neuroscience, 2021, 41, 4141-4157.	3.6	4
57	When cats need to see to step accurately?. Journal of Physiology, 2021, , .	2.9	4
58	Response selectivity and Î³-frequency fluctuations of the membrane potential in visual cortical neurons. Neurocomputing, 2004, 58-60, 957-963.	5.9	3
59	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
60	Very low concentrations of ethanol suppress excitatory synaptic transmission in rat visual cortex. European Journal of Neuroscience, 2017, 45, 1333-1342.	2.6	2
61	Local action for global vision. Journal of Physiology, 2011, 589, 3419-3420.	2.9	0