Gaute Tomas Einevoll

List of Publications by Year
in descending order

97 papers	6,146 citations	136740 32 h-index	98622 67 g-index
122 all docs	122 docs citations	122 times ranked	5781 citing authors

#	Article	IF	Citations
1	Modelling and analysis of local field potentials for studying the function of cortical circuits. Nature Reviews Neuroscience, 2013, 14, 770-785.	4.9	693
2	Modeling the Spatial Reach of the LFP. Neuron, 2011, 72, 859-872.	3.8	393
3	Computing the Local Field Potential (LFP) from Integrate-and-Fire Network Models. PLoS Computational Biology, 2015, 11, e1004584.	1.5	391
4	Current-source density estimation based on inversion of electrostatic forward solution: Effects of finite extent of neuronal activity and conductivity discontinuities. Journal of Neuroscience Methods, 2006, 154, 116-133.	1.3	325
5	Investigating large-scale brain dynamics using field potential recordings: analysis and interpretation. Nature Neuroscience, 2018, 21, 903-919.	7.1	299
6	Amplitude Variability and Extracellular Low-Pass Filtering of Neuronal Spikes. Biophysical Journal, 2008, 94, 784-802.	0.2	217
7	Intrinsic dendritic filtering gives low-pass power spectra of local field potentials. Journal of Computational Neuroscience, 2010, 29, 423-444.	0.6	208
8	<i>In vivo</i>Stimulus-Induced Vasodilation Occurs without IP₃Receptor Activation and May Precede Astrocytic Calcium Increase. Journal of Neuroscience, 2013, 33, 8411-8422.	1.7	191
9	Towards reliable spike-train recordings from thousands of neurons with multielectrodes. Current Opinion in Neurobiology, 2012, 22, 11-17.	2.0	184
10	Cell type specificity of neurovascular coupling in cerebral cortex. ELife, 2016, 5, .	2.8	176
11	Decorrelation of Neural-Network Activity by Inhibitory Feedback. PLoS Computational Biology, 2012, 8, e1002596.	1.5	159
12	Laminar Population Analysis: Estimating Firing Rates and Evoked Synaptic Activity From Multielectrode Recordings in Rat Barrel Cortex. Journal of Neurophysiology, 2007, 97, 2174-2190.	0.9	148
13	LFPy: a tool for biophysical simulation of extracellular potentials generated by detailed model neurons. Frontiers in Neuroinformatics, 2013, 7, 41.	1.3	147
14	Frequency Dependence of Signal Power and Spatial Reach of the Local Field Potential. PLoS Computational Biology, 2013, 9, e1003137.	1.5	133
15	The Scientific Case for Brain Simulations. Neuron, 2019, 102, 735-744.	3.8	123
16	Astrocytic Mechanisms Explaining Neural-Activity-Induced Shrinkage of Extraneuronal Space. PLoS Computational Biology, 2009, 5, e1000272.	1.5	107
17	Estimation of population firing rates and current source densities from laminar electrode recordings. Journal of Computational Neuroscience, 2008, 24, 291-313.	0.6	103
18	Multimodal Modeling of Neural Network Activity: Computing LFP, ECoG, EEG, and MEG Signals With LFPy 2.0. Frontiers in Neuroinformatics, 2018, 12, 92.	1.3	103

#	Article	IF	Citations
19	Hybrid Scheme for Modeling Local Field Potentials from Point-Neuron Networks. Cerebral Cortex, 2016, 26, 4461-4496.	1.6	89
20	Modelling and Analysis of Electrical Potentials Recorded in Microelectrode Arrays (MEAs). Neuroinformatics, 2015, 13, 403-426.	1.5	81
21	Generalized Laminar Population Analysis (gLPA) for Interpretation of Multielectrode Data from Cortex. Frontiers in Neuroinformatics, 2016, 10, 1.	1.3	76
22	The Challenge of Connecting the Dots in the B.R.A.I.N.. Neuron, 2013, 80, 270-274.	3.8	73
23	Active subthreshold dendritic conductances shape the local field potential. Journal of Physiology, 2016, 594, 3809-3825.	1.3	69
24	Uncertainpy: A Python Toolbox for Uncertainty Quantification and Sensitivity Analysis in Computational Neuroscience. Frontiers in Neuroinformatics, 2018, 12, 49.	1.3	66
25	Dependence of spontaneous neuronal firing and depolarisation block on astroglial membrane transport mechanisms. Journal of Computational Neuroscience, 2012, 32, 147-165.	0.6	64
26	Impedance Spectrum in Cortical Tissue: Implications for Propagation of LFP Signals on the Microscopic Level. ENeuro, 2017, 4, ENEURO.0291-16.2016.	0.9	61
27	Effect of Ionic Diffusion on Extracellular Potentials in Neural Tissue. PLoS Computational Biology, 2016, 12, e1005193.	1.5	58
28	Inverse Current Source Density Method in Two Dimensions: Inferring Neural Activation from Multielectrode Recordings. Neuroinformatics, 2011, 9, 401-425.	1.5	56
29	Extracellular spikes and CSD. , 0, , 92-135.		55
30	An Evaluation of the Accuracy of Classical Models for Computing the Membrane Potential and Extracellular Potential for Neurons. Frontiers in Computational Neuroscience, 2017, 11, 27.	1.2	55
31	Electrodiffusive Model for Astrocytic and Neuronal Ion Concentration Dynamics. PLoS Computational Biology, 2013, 9, e1003386.	1.5	51
32	ViSAPy: A Python tool for biophysics-based generation of virtual spiking activity for evaluation of spike-sorting algorithms. Journal of Neuroscience Methods, 2015, 245, 182-204.	1.3	45
33	The roadmap for estimation of cell-type-specific neuronal activity from non-invasive measurements. Philosophical Transactions of the Royal Society B: Biological Sciences, 2016, 371, 20150356.	1.8	41
34	Dynamics of self-sustained asynchronous-irregular activity in random networks of spiking neurons with strong synapses. Frontiers in Computational Neuroscience, 2014, 8, 136.	1.2	38
35	Power Laws from Linear Neuronal Cable Theory: Power Spectral Densities of the Soma Potential, Soma Membrane Current and Single-Neuron Contribution to the EEG. PLoS Computational Biology, 2014, 10, e1003928.	1.5	38
36	h-Type Membrane Current Shapes the Local Field Potential from Populations of Pyramidal Neurons. Journal of Neuroscience, 2018, 38, 6011-6024.	1.7	37

#	ARTICLE	IF	CITATIONS
37	Biophysically detailed forward modeling of the neural origin of EEG and MEG signals. NeuroImage, 2021, 225, 117467.	2.1	37
38	A Multi-Compartment Model for Interneurons in the Dorsal Lateral Geniculate Nucleus. PLoS Computational Biology, 2011, 7, e1002160.	1.5	36
39	How pattern formation in ring networks of excitatory and inhibitory spiking neurons depends on the input current regime. Frontiers in Computational Neuroscience, 2013, 7, 187.	1.2	35
40	Brain Modeling ToolKit: An open source software suite for multiscale modeling of brain circuits. PLoS Computational Biology, 2020, 16, e1008386.	1.5	34
41	Combining biophysical modeling and deep learning for multielectrode array neuron localization and classification. Journal of Neurophysiology, 2018, 120, 1212-1232.	0.9	33
42	MEArec: A Fast and Customizable Testbench Simulator for Ground-truth Extracellular Spiking Activity. Neuroinformatics, 2021, 19, 185-204.	1.5	33
43	Estimation of Thalamocortical and Intracortical Network Models from Joint Thalamic Single-Electrode and Cortical Laminar-Electrode Recordings in the Rat Barrel System. PLoS Computational Biology, 2009, 5, e1000328.	1.5	30
44	From Maxwell's equations to the theory of currentâ€source density analysis. European Journal of Neuroscience, 2017, 45, 1013-1023.	1.2	30
45	Alterations in Schizophrenia-Associated Genes Can Lead to Increased Power in Delta Oscillations. Cerebral Cortex, 2019, 29, 875-891.	1.6	30
46	Corrected Four-Sphere Head Model for EEG Signals. Frontiers in Human Neuroscience, 2017, 11, 490.	1.0	29
47	Finite Element Simulation of Ionic Electrodiffusion in Cellular Geometries. Frontiers in Neuroinformatics, 2020, 14, 11.	1.3	29
48	A unified computational model for cortical post-synaptic plasticity. ELife, 2020, 9, .	2.8	29
49	On the Estimation of Population-Specific Synaptic Currents from Laminar Multielectrode Recordings. Frontiers in Neuroinformatics, 2011, 5, 32.	1.3	28
50	Focal Local Field Potential Signature of the Single-Axon Monosynaptic Thalamocortical Connection. Journal of Neuroscience, 2017, 37, 5123-5143.	1.7	28
51	Corticothalamic feedback sculpts visual spatial integration in mouse thalamus. Nature Neuroscience, 2021, 24, 1711-1720.	7.1	28
52	A stepwise neuron model fitting procedure designed for recordings with high spatial resolution: Application to layer 5 pyramidal cells. Journal of Neuroscience Methods, 2018, 293, 264-283.	1.3	27
53	A Kirchhoff-Nernst-Planck framework for modeling large scale extracellular electrodiffusion surrounding morphologically detailed neurons. PLoS Computational Biology, 2018, 14, e1006510.	1.5	26
54	Pleiotropic effects of schizophrenia-associated genetic variants in neuron firing and cardiac pacemaking revealed by computational modeling. Translational Psychiatry, 2017, 7, 5.	2.4	24

#	Article	IF	Citations
55	An electrodiffusive, ion conserving Pinsky-Rinzel model with homeostatic mechanisms. PLoS Computational Biology, 2020, 16, e1007661.	1.5	24
56	Neural timing of stimulus events with microsecond precision. PLoS Biology, 2018, 16, e2006422.	2.6	23
57	Extended difference-of-Gaussians model incorporating cortical feedback for relay cells in the lateral geniculate nucleus of cat. Cognitive Neurodynamics, 2012, 6, 307-324.	2.3	21
58	Pitfalls in the interpretation of multielectrode data: on the infeasibility of the neuronal current-source monopoles. Journal of Neurophysiology, 2013, 109, 1681-1682.	0.9	21
59	Functional Effects of Schizophrenia-Linked Genetic Variants on Intrinsic Single-Neuron Excitability: A Modeling Study. Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, 2016, 1, 49-59.	1.1	21
60	Computation of the electroencephalogram (EEG) from network models of point neurons. PLoS Computational Biology, 2021, 17, e1008893.	1.5	20
61	Biophysical Psychiatryâ€"How Computational Neuroscience Can Help to Understand the Complex Mechanisms of Mental Disorders. Frontiers in Psychiatry, 2019, 10, 534.	1.3	19
62	Estimation of neural network model parameters from local field potentials (LFPs). PLoS Computational Biology, 2020, 16, e1007725.	1.5	18
63	Firing-rate models capture essential response dynamics of LGN relay cells. Journal of Computational Neuroscience, 2013, 35, 359-375.	0.6	16
64	Ion diffusion may introduce spurious current sources in current-source density (CSD) analysis. Journal of Neurophysiology, 2017, 118, 114-120.	0.9	15
65	An electrodiffusive neuron-extracellular-glia model for exploring the genesis of slow potentials in the brain. PLoS Computational Biology, 2021, 17, e1008143.	1.5	15
66	Coarse-to-Fine Changes of Receptive Fields in Lateral Geniculate Nucleus Have a Transient and a Sustained Component That Depend on Distinct Mechanisms. PLoS ONE, 2011, 6, e24523.	1.1	14
67	Firing-rate models for neurons with a broad repertoire of spiking behaviors. Journal of Computational Neuroscience, 2018, 45, 103-132.	0.6	13
68	A minimal mechanistic model for temporal signal processing in the lateral geniculate nucleus. Cognitive Neurodynamics, 2012, 6, 259-281.	2.3	12
69	Experience-dependent modulation of the visual evoked potential: Testing effect sizes, retention over time, and associations with age in 415 healthy individuals. NeuroImage, 2020, 223, 117302.	2.1	12
70	Biophysical Network Modelling of the dLGN Circuit: Different Effects of Triadic and Axonal Inhibition on Visual Responses of Relay Cells. PLoS Computational Biology, 2016, 12, e1004929.	1.5	12
71	An automated online positioning system and simulation environment for multi-electrodes in extracellular recordings. , 2010, 2010, 593-7.		10
72	Astrocytic Ion Dynamics: Implications for Potassium Buffering and Liquid Flow. Springer Series in Computational Neuroscience, 2019, , 363-391.	0.3	10

#	Article	IF	Citations
73	The Subcellular Distribution of T-Type Ca2+ Channels in Interneurons of the Lateral Geniculate Nucleus. PLoS ONE, 2014, 9, e107780.	1.1	9
74	Independent Component Analysis for Fully Automated Multi-Electrode Array Spike Sorting. , 2018, 2018, 2627-2630.		9
75	RippleNet: a Recurrent Neural Network for Sharp Wave Ripple (SPW-R) Detection. Neuroinformatics, 2021, 19, 493-514.	1.5	9
76	Firing-rate based network modeling of the dLGN circuit: Effects of cortical feedback on spatiotemporal response properties of relay cells. PLoS Computational Biology, 2018, 14, e1006156.	1.5	8
77	Evidence for Reduced Long-Term Potentiation-Like Visual Cortical Plasticity in Schizophrenia and Bipolar Disorder. Schizophrenia Bulletin, 2021, 47, 1751-1760.	2.3	8
78	Neuronify: An Educational Simulator for Neural Circuits. ENeuro, 2017, 4, ENEURO.0022-17.2017.	0.9	7
79	Biophysical network modeling of the dLGN circuit: Effects of cortical feedback on spatial response properties of relay cells. PLoS Computational Biology, 2018, 14, e1005930.	1.5	6
80	A computational model for gonadotropin releasing cells in the teleost fish medaka. PLoS Computational Biology, 2019, 15, e1006662.	1.5	5
81	Computational Modeling of Genetic Contributions to Excitability and Neural Coding in Layer V Pyramidal Cells: Applications to Schizophrenia Pathology. Frontiers in Computational Neuroscience, 2019, 13, 66.	1.2	5
82	Computing Extracellular Electric Potentials from Neuronal Simulations. Advances in Experimental Medicine and Biology, 2022, 1359, 179-199.	0.8	5
83	Spatially resolved estimation of metabolic oxygen consumption from optical measurements in cortex. Neurophotonics, 2020, 7, 035005.	1.7	4
84	Sharing with Python. Frontiers in Neuroscience, 2009, 3, 334-335.	1.4	3
85	All-Optical Electrophysiology in hiPSC-Derived Neurons With Synthetic Voltage Sensors. Frontiers in Cellular Neuroscience, 2021, 15, 671549.	1.8	3
86	LFPy: Multimodal Modeling of Extracellular Neuronal Recordings in Python. , 2019, , 1-10.		3
87	Multi-Linear Population Analysis (MLPA) of LFP Data Using Tensor Decompositions. Frontiers in Applied Mathematics and Statistics, 2020, 6, .	0.7	2
88	Modelling and Analysis of Electrical Potentials Recorded in Microelectrode Arrays (MEAs). , 2015, 13, 403.		1
89	Lateral Geniculate Nucleus (LGN) Models. , 2018, , 1-7.		0
90	Extracellular Potentials, Forward Modeling of. , 2020, , 1-6.		0

#	Article	IF	Citations
91	An electrodiffusive, ion conserving Pinsky-Rinzel model with homeostatic mechanisms. , 2020, 16, e1007661.		0
92	An electrodiffusive, ion conserving Pinsky-Rinzel model with homeostatic mechanisms. , 2020, 16, e1007661.		0
93	An electrodiffusive, ion conserving Pinsky-Rinzel model with homeostatic mechanisms. , 2020, 16, e1007661.		0
94	An electrodiffusive, ion conserving Pinsky-Rinzel model with homeostatic mechanisms. , 2020, 16, e1007661.		0
95	Extracellular Potentials, Forward Modeling of. , 2022, , 1375-1380.		0
96	LFPy: Multimodal Modeling of Extracellular Neuronal Recordings in Python. , 2022, , 1791-1800.		0
97	Lateral Geniculate Nucleus (LGN) Models. , 2022, , 1780-1786.		0