

Romain Brette

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

88
papers

4,337
citations

34
h-index

65
g-index

105
ext. papers

5,625
ext. citations

4.1
avg, IF

6.26
L-index

#	Paper	IF	Citations
88	Adaptive exponential integrate-and-fire model as an effective description of neuronal activity. <i>Journal of Neurophysiology</i> , 2005 , 94, 3637-42	3.2	664
87	Simulation of networks of spiking neurons: a review of tools and strategies. <i>Journal of Computational Neuroscience</i> , 2007 , 23, 349-98	1.4	486
86	Brian: a simulator for spiking neural networks in python. <i>Frontiers in Neuroinformatics</i> , 2008 , 2, 5	3.9	300
85	The brian simulator. <i>Frontiers in Neuroscience</i> , 2009 , 3, 192-7	5.1	294
84	Dynamic I-V curves are reliable predictors of naturalistic pyramidal-neuron voltage traces. <i>Journal of Neurophysiology</i> , 2008 , 99, 656-66	3.2	151
83	Brian 2, an intuitive and efficient neural simulator. <i>ELife</i> , 2019 , 8,	8.9	132
82	A threshold equation for action potential initiation. <i>PLoS Computational Biology</i> , 2010 , 6, e1000850	5	126
81	Philosophy of the Spike: Rate-Based vs. Spike-Based Theories of the Brain. <i>Frontiers in Systems Neuroscience</i> , 2015 , 9, 151	3.5	106
80	Dynamics and bifurcations of the adaptive exponential integrate-and-fire model. <i>Biological Cybernetics</i> , 2008 , 99, 319-34	2.8	97
79	Equation-oriented specification of neural models for simulations. <i>Frontiers in Neuroinformatics</i> , 2014 , 8, 6	3.9	96
78	An ecological approach to neural computation. <i>BMC Neuroscience</i> , 2013 , 14,	3.2	78
77	26th Annual Computational Neuroscience Meeting (CNS*2017): Part 1. <i>BMC Neuroscience</i> , 2017 , 18,	3.2	78
76	Origin of the kink of somatic action potentials. <i>BMC Neuroscience</i> , 2015 , 16,	3.2	78
75	Multi-compartmental modeling in Brian 2. <i>BMC Neuroscience</i> , 2015 , 16,	3.2	78
74	A functional spiking model of the ITD processing pathway of the barn owl. <i>BMC Neuroscience</i> , 2011 , 12,	3.2	78
73	Encoding the pitch of sounds using synchrony receptive fields. <i>BMC Neuroscience</i> , 2011 , 12,	3.2	78
72	Computing with neural synchrony. <i>PLoS Computational Biology</i> , 2012 , 8, e1002561	5	77

71	Impact of fast sodium channel inactivation on spike threshold dynamics and synaptic integration. <i>PLoS Computational Biology</i> , 2011 , 7, e1001129	5	64
70	Covariation of axon initial segment location and dendritic tree normalizes the somatic action potential. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, 14841-14846	11.5	58
69	Spike-threshold adaptation predicted by membrane potential dynamics in vivo. <i>PLoS Computational Biology</i> , 2014 , 10, e1003560	5	56
68	Exact simulation of integrate-and-fire models with synaptic conductances. <i>Neural Computation</i> , 2006 , 18, 2004-27	2.9	55
67	Reliability of spike timing is a general property of spiking model neurons. <i>Neural Computation</i> , 2003 , 15, 279-308	2.9	53
66	Fitting neuron models to spike trains. <i>Frontiers in Neuroscience</i> , 2011 , 5, 9	5.1	51
65	High-resolution intracellular recordings using a real-time computational model of the electrode. <i>Neuron</i> , 2008 , 59, 379-91	13.9	51
64	Late emergence of the vibrissa direction selectivity map in the rat barrel cortex. <i>Journal of Neuroscience</i> , 2011 , 31, 10689-700	6.6	48
63	Automatic fitting of spiking neuron models to electrophysiological recordings. <i>Frontiers in Neuroinformatics</i> , 2010 , 4, 2	3.9	43
62	Generation of Correlated Spike Trains. <i>Neural Computation</i> , 2009 , 21, 188-215	2.9	42
61	Spiking Dynamics of Bidimensional Integrate-and-Fire Neurons. <i>SIAM Journal on Applied Dynamical Systems</i> , 2009 , 8, 1462-1506	2.8	41
60	Is coding a relevant metaphor for the brain?. <i>Behavioral and Brain Sciences</i> , 2018 , 42, e215	0.9	40
59	Sharpness of spike initiation in neurons explained by compartmentalization. <i>PLoS Computational Biology</i> , 2013 , 9, e1003338	5	39
58	What is the most realistic single-compartment model of spike initiation?. <i>PLoS Computational Biology</i> , 2015 , 11, e1004114	5	38
57	Sensitivity of noisy neurons to coincident inputs. <i>Journal of Neuroscience</i> , 2011 , 31, 17193-206	6.6	37
56	Simulating spiking neural networks on GPU. <i>Network: Computation in Neural Systems</i> , 2012 , 23, 167-82	0.7	36
55	Characterizing synaptic conductance fluctuations in cortical neurons and their influence on spike generation. <i>Journal of Neuroscience Methods</i> , 2008 , 169, 302-22	3	36
54	Decoding neural responses to temporal cues for sound localization. <i>ELife</i> , 2013 , 2, e01312	8.9	34

53	Vectorized algorithms for spiking neural network simulation. <i>Neural Computation</i> , 2011 , 23, 1503-35	2.9	32
52	Exact simulation of integrate-and-fire models with exponential currents. <i>Neural Computation</i> , 2007 , 19, 2604-9	2.9	32
51	The electrical significance of axon location diversity. <i>Current Opinion in Neurobiology</i> , 2018 , 51, 52-59	7.6	27
50	Generation of correlated spike trains. <i>Neural Computation</i> , 2009 , 21, 188-215	2.9	25
49	Dynamics of one-dimensional spiking neuron models. <i>Journal of Mathematical Biology</i> , 2004 , 48, 38-56	2	22
48	Mobility as the Purpose of Postural Control. <i>Frontiers in Computational Neuroscience</i> , 2017 , 11, 67	3.5	17
47	On the variation of interaural time differences with frequency. <i>Journal of the Acoustical Society of America</i> , 2016 , 139, 1810	2.2	17
46	Brian hears: online auditory processing using vectorization over channels. <i>Frontiers in Neuroinformatics</i> , 2011 , 5, 9	3.9	16
45	Brian: a simulator for spiking neural networks in Python. <i>BMC Neuroscience</i> , 2008 , 9,	3.2	16
44	Theoretical relation between axon initial segment geometry and excitability. <i>ELife</i> , 2020 , 9,	8.9	16
43	Effect of instantaneous frequency glides on interaural time difference processing by auditory coincidence detectors. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011 , 108, 18138-43	11.5	15
42	A non-parametric electrode model for intracellular recording. <i>Neurocomputing</i> , 2007 , 70, 1597-1601	5.4	15
41	Code Generation in Computational Neuroscience: A Review of Tools and Techniques. <i>Frontiers in Neuroinformatics</i> , 2018 , 12, 68	3.9	15
40	Fast Learning with Weak Synaptic Plasticity. <i>Journal of Neuroscience</i> , 2015 , 35, 13351-62	6.6	14
39	The impact of early reflections on binaural cues. <i>Journal of the Acoustical Society of America</i> , 2012 , 132, 9-27	2.2	14
38	Predicting spike timing in highly synchronous auditory neurons at different sound levels. <i>Journal of Neurophysiology</i> , 2013 , 110, 1672-88	3.2	13
37	Brian 2: neural simulations on a variety of computational hardware. <i>BMC Neuroscience</i> , 2014 , 15, P199	3.2	12
36	Spike-timing dependent plasticity and feed-forward input oscillations produce precise and invariant spike phase-locking. <i>Frontiers in Computational Neuroscience</i> , 2011 , 5, 45	3.5	12

35	Spike-timing-based computation in sound localization. <i>PLoS Computational Biology</i> , 2010 , 6, e1000993	5	12
34	Neural tuning matches frequency-dependent time differences between the ears. <i>ELife</i> , 2015 , 4,	8.9	12
33	Neural coding: The bureaucratic model of the brain. <i>Behavioral and Brain Sciences</i> , 2019 , 42, e243	0.9	12
32	Anticipatory coadaptation of ankle stiffness and sensorimotor gain for standing balance. <i>PLoS Computational Biology</i> , 2019 , 15, e1007463	5	12
31	Brian 2 - the second coming: spiking neural network simulation in Python with code generation. <i>BMC Neuroscience</i> , 2013 , 14,	3.2	11
30	Neural development of binaural tuning through Hebbian learning predicts frequency-dependent best delays. <i>Journal of Neuroscience</i> , 2011 , 31, 11692-6	6.6	11
29	A Structural Theory of Pitch(1,2,3). <i>ENeuro</i> , 2014 , 1,	3.9	10
28	On the interpretation of sensitivity analyses of neural responses. <i>Journal of the Acoustical Society of America</i> , 2010 , 128, 2965-72	2.2	10
27	The basis of sharp spike onset in standard biophysical models. <i>PLoS ONE</i> , 2017 , 12, e0175362	3.7	10
26	Brian simulator. <i>Scholarpedia Journal</i> , 2013 , 8, 10883	1.5	9
25	Postural adjustments in anticipation of predictable perturbations allow elderly fallers to achieve a balance recovery performance equivalent to elderly non-fallers. <i>Gait and Posture</i> , 2019 , 71, 131-137	2.6	7
24	Intracellular recording44-91		7
23	Rotation Numbers of Discontinuous Orientation-Preserving Circle Maps. <i>Set-Valued and Variational Analysis</i> , 2003 , 11, 359-371		7
22	Estimation of the low-frequency components of the head-related transfer functions of animals from photographs. <i>Journal of the Acoustical Society of America</i> , 2014 , 135, 2534-44	2.2	6
21	On the design of script languages for neural simulation. <i>Network: Computation in Neural Systems</i> , 2012 , 23, 150-6	0.7	6
20	The Cauchy problem for one-dimensional spiking neuron models. <i>Cognitive Neurodynamics</i> , 2008 , 2, 21-74.2		6
19	Modeling Neuron-Glia Interactions with the Brian 2 Simulator. <i>Springer Series in Computational Neuroscience</i> , 2019 , 471-505	1.1	5
18	Axonal Na channels detect and transmit levels of input synchrony in local brain circuits. <i>Science Advances</i> , 2020 , 6, eaay4313	14.3	5

17	On the relation between pitch and level. <i>Hearing Research</i> , 2017 , 348, 63-69	3.9	4
16	A calibration-free electrode compensation method. <i>Journal of Neurophysiology</i> , 2012 , 108, 2629-39	3.2	4
15	Contribution of the Axon Initial Segment to Action Potentials Recorded Extracellularly. <i>ENeuro</i> , 2018 , 5,	3.9	4
14	Integrative Neuroscience of , a "Swimming Neuron". <i>ENeuro</i> , 2021 , 8,	3.9	4
13	Brian 2: an intuitive and efficient neural simulator		3
12	A simple device to immobilize protists for electrophysiology and microinjection. <i>Journal of Experimental Biology</i> , 2020 , 223,	3	2
11	Author response: Brian 2, an intuitive and efficient neural simulator 2019 ,		2
10	Slow feature analysis with spiking neurons and its application to audio stimuli. <i>Journal of Computational Neuroscience</i> , 2016 , 40, 317-29	1.4	1
9	A unifying theory of ITD-based sound azimuth localization at the behavioral and neural levels. <i>BMC Neuroscience</i> , 2013 , 14,	3.2	1
8	Spiking models for level-invariant encoding. <i>Frontiers in Computational Neuroscience</i> , 2011 , 5, 63	3.5	1
7	Modeling neuron-glia interactions with the Brian 2 simulator		1
6	Does the present moment depend on the moments not lived?. <i>Behavioral and Brain Sciences</i> , 2022 , 45, e43	0.9	1
5	Dynamic Clamp with High-Resistance Electrodes Using Active Electrode Compensation In Vitro and In Vivo 2009 , 347-382		0
4	Electrical match between initial segment and somatodendritic compartment for action potential backpropagation in retinal ganglion cells. <i>Journal of Neurophysiology</i> , 2021 , 126, 28-46	3.2	0
3	The Cauchy Problem for Spiking Neuron Models 2008 , 9-12		
2	The world is complex, not just noisy. <i>Behavioral and Brain Sciences</i> , 2018 , 41, e227	0.9	
1	Brian Spiking Neural Network Simulator 2022 , 580-582		