Romain Brette

List of Publications by Year in Descending Order

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	Does the present moment depend on the moments not lived?. *Behavioral and Brain Sciences*, **2022**, 45, e43	0.9	1
87	Brian Spiking Neural Network Simulator **2022**, 580-582		
86	Integrative Neuroscience of , a "Swimming Neuron". *ENeuro*, **2021**, 8,	3.9	4
85	Electrical match between initial segment and somatodendritic compartment for action potential backpropagation in retinal ganglion cells. *Journal of Neurophysiology*, **2021**, 126, 28-46	3.2	0
84	A simple device to immobilize protists for electrophysiology and microinjection. *Journal of Experimental Biology*, **2020**, 223,	3	2
83	Axonal Na channels detect and transmit levels of input synchrony in local brain circuits. *Science Advances*, **2020**, 6, eaay4313	14.3	5
82	Theoretical relation between axon initial segment geometry and excitability. *ELife*, **2020**, 9,	8.9	16
81	Postural adjustments in anticipation of predictable perturbations allow elderly fallers to achieve a balance recovery performance equivalent to elderly non-fallers. *Gait and Posture*, **2019**, 71, 131-137	2.6	7
80	Modeling Neuron□lia Interactions with the Brian 2 Simulator. *Springer Series in Computational Neuroscience*, **2019**, 471-505	1.1	5
79	Brian 2, an intuitive and efficient neural simulator. *ELife*, **2019**, 8,	8.9	132
78	Author response: Brian 2, an intuitive and efficient neural simulator **2019**,		2
77	Neural coding: The bureaucratic model of the brain. *Behavioral and Brain Sciences*, **2019**, 42, e243	0.9	12
76	Anticipatory coadaptation of ankle stiffness and sensorimotor gain for standing balance. *PLoS Computational Biology*, **2019**, 15, e1007463	5	12
75	Is coding a relevant metaphor for the brain?. *Behavioral and Brain Sciences*, **2018**, 42, e215	0.9	40
74	The electrical significance of axon location diversity. *Current Opinion in Neurobiology*, **2018**, 51, 52-59	7.6	27
73	Contribution of the Axon Initial Segment to Action Potentials Recorded Extracellularly. *ENeuro*, **2018**, 5,	3.9	4
72	The world is complex, not just noisy. *Behavioral and Brain Sciences*, **2018**, 41, e227	0.9	

71	Code Generation in Computational Neuroscience: A Review of Tools and Techniques. *Frontiers in Neuroinformatics*, **2018**, 12, 68	3.9	15
70	On the relation between pitch and level. *Hearing Research*, **2017**, 348, 63-69	3.9	4
69	26th Annual Computational Neuroscience Meeting (CNS*2017): Part 1. *BMC Neuroscience*, **2017**, 18,	3.2	78
68	Mobility as the Purpose of Postural Control. *Frontiers in Computational Neuroscience*, **2017**, 11, 67	3.5	17
67	The basis of sharp spike onset in standard biophysical models. *PLoS ONE*, **2017**, 12, e0175362	3.7	10
66	Slow feature analysis with spiking neurons and its application to audio stimuli. *Journal of Computational Neuroscience*, **2016**, 40, 317-29	1.4	1
65	Covariation of axon initial segment location and dendritic tree normalizes the somatic action potential. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 14841-14846	11.5	58
64	On the variation of interaural time differences with frequency. *Journal of the Acoustical Society of America*, **2016**, 139, 1810	2.2	17
63	What is the most realistic single-compartment model of spike initiation?. *PLoS Computational Biology*, **2015**, 11, e1004114	5	38
62	Fast Learning with Weak Synaptic Plasticity. *Journal of Neuroscience*, **2015**, 35, 13351-62	6.6	14
61	Origin of the kink of somatic action potentials. *BMC Neuroscience*, **2015**, 16,	3.2	78
60	Multi-compartmental modeling in Brian 2. *BMC Neuroscience*, **2015**, 16,	3.2	78
59	Philosophy of the Spike: Rate-Based vs. Spike-Based Theories of the Brain. *Frontiers in Systems Neuroscience*, **2015**, 9, 151	3.5	106
58	Neural tuning matches frequency-dependent time differences between the ears. *ELife*, **2015**, 4,	8.9	12
57	Brian 2: neural simulations on a variety of computational hardware. *BMC Neuroscience*, **2014**, 15, P199	3.2	12
56	A Structural Theory of Pitch(1,2,3). *ENeuro*, **2014**, 1,	3.9	10
55	Equation-oriented specification of neural models for simulations. *Frontiers in Neuroinformatics*, **2014**, 8, 6	3.9	96
54	Estimation of the low-frequency components of the head-related transfer functions of animals from photographs. *Journal of the Acoustical Society of America*, **2014**, 135, 2534-44	2.2	6

53	Spike-threshold adaptation predicted by membrane potential dynamics in vivo. *PLoS Computational Biology*, **2014**, 10, e1003560	5	56
52	An ecological approach to neural computation. *BMC Neuroscience*, **2013**, 14,	3.2	78
51	Brian 2 - the second coming: spiking neural network simulation in Python with code generation. *BMC Neuroscience*, **2013**, 14,	3.2	11
50	A unifying theory of ITD-based sound azimuth localization at the behavioral and neural levels. *BMC Neuroscience*, **2013**, 14,	3.2	1
49	Sharpness of spike initiation in neurons explained by compartmentalization. *PLoS Computational Biology*, **2013**, 9, e1003338	5	39
48	Predicting spike timing in highly synchronous auditory neurons at different sound levels. *Journal of Neurophysiology*, **2013**, 110, 1672-88	3.2	13
47	Brian simulator. *Scholarpedia Journal*, **2013**, 8, 10883	1.5	9
46	Decoding neural responses to temporal cues for sound localization. *ELife*, **2013**, 2, e01312	8.9	34
45	On the design of script languages for neural simulation. *Network: Computation in Neural Systems*, **2012**, 23, 150-6	0.7	6
44	The impact of early reflections on binaural cues. *Journal of the Acoustical Society of America*, **2012**, 132, 9-27	2.2	14
43	Simulating spiking neural networks on GPU. *Network: Computation in Neural Systems*, **2012**, 23, 167-82	0.7	36
42	Computing with neural synchrony. *PLoS Computational Biology*, **2012**, 8, e1002561	5	77
41	A calibration-free electrode compensation method. *Journal of Neurophysiology*, **2012**, 108, 2629-39	3.2	4
40	Spiking models for level-invariant encoding. *Frontiers in Computational Neuroscience*, **2011**, 5, 63	3.5	1
39	Brian hears: online auditory processing using vectorization over channels. *Frontiers in Neuroinformatics*, **2011**, 5, 9	3.9	16
38	Spike-timing dependent plasticity and feed-forward input oscillations produce precise and invariant spike phase-locking. *Frontiers in Computational Neuroscience*, **2011**, 5, 45	3.5	12
37	Fitting neuron models to spike trains. *Frontiers in Neuroscience*, **2011**, 5, 9	5.1	51
36	A functional spiking model of the ITD processing pathway of the barn owl. *BMC Neuroscience*, **2011**, 12,	3.2	78

35	Encoding the pitch of sounds using synchrony receptive fields. *BMC Neuroscience*, **2011**, 12,	3.2	78
34	Vectorized algorithms for spiking neural network simulation. *Neural Computation*, **2011**, 23, 1503-35	2.9	32
33	Effect of instantaneous frequency glides on interaural time difference processing by auditory coincidence detectors. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 18138-43	11.5	15
32	Neural development of binaural tuning through Hebbian learning predicts frequency-dependent best delays. *Journal of Neuroscience*, **2011**, 31, 11692-6	6.6	11
31	Sensitivity of noisy neurons to coincident inputs. *Journal of Neuroscience*, **2011**, 31, 17193-206	6.6	37
30	Impact of fast sodium channel inactivation on spike threshold dynamics and synaptic integration. *PLoS Computational Biology*, **2011**, 7, e1001129	5	64
29	Late emergence of the vibrissa direction selectivity map in the rat barrel cortex. *Journal of Neuroscience*, **2011**, 31, 10689-700	6.6	48
28	Automatic fitting of spiking neuron models to electrophysiological recordings. *Frontiers in Neuroinformatics*, **2010**, 4, 2	3.9	43
27	A threshold equation for action potential initiation. *PLoS Computational Biology*, **2010**, 6, e1000850	5	126
26	Spike-timing-based computation in sound localization. *PLoS Computational Biology*, **2010**, 6, e1000993	5	12
25	On the interpretation of sensitivity analyses of neural responses. *Journal of the Acoustical Society of America*, **2010**, 128, 2965-72	2.2	10
24	The brian simulator. *Frontiers in Neuroscience*, **2009**, 3, 192-7	5.1	294
23	Generation of Correlated Spike Trains. *Neural Computation*, **2009**, 21, 188-215	2.9	42
22	Spiking Dynamics of Bidimensional Integrate-and-Fire Neurons. *SIAM Journal on Applied Dynamical Systems*, **2009**, 8, 1462-1506	2.8	41
21	Generation of correlated spike trains. *Neural Computation*, **2009**, 21, 188-215	2.9	25
20	Dynamic Clamp with High-Resistance Electrodes Using Active Electrode Compensation In Vitro and In Vivo **2009**, 347-382		0
19	Brian: a simulator for spiking neural networks in Python. *BMC Neuroscience*, **2008**, 9,	3.2	16
18	High-resolution intracellular recordings using a real-time computational model of the electrode. *Neuron*, **2008**, 59, 379-91	13.9	51

17	Dynamic I-V curves are reliable predictors of naturalistic pyramidal-neuron voltage traces. *Journal of Neurophysiology*, **2008**, 99, 656-66	3.2	151
16	Brian: a simulator for spiking neural networks in python. *Frontiers in Neuroinformatics*, **2008**, 2, 5	3.9	300
15	The Cauchy problem for one-dimensional spiking neuron models. *Cognitive Neurodynamics*, **2008**, 2, 21-7	4.2	6
14	Dynamics and bifurcations of the adaptive exponential integrate-and-fire model. *Biological Cybernetics*, **2008**, 99, 319-34	2.8	97
13	Characterizing synaptic conductance fluctuations in cortical neurons and their influence on spike generation. *Journal of Neuroscience Methods*, **2008**, 169, 302-22	3	36
12	The Cauchy Problem for Spiking Neuron Models **2008**, 9-12		
11	A non-parametric electrode model for intracellular recording. *Neurocomputing*, **2007**, 70, 1597-1601	5.4	15
10	Simulation of networks of spiking neurons: a review of tools and strategies. *Journal of Computational Neuroscience*, **2007**, 23, 349-98	1.4	486
9	Exact simulation of integrate-and-fire models with exponential currents. *Neural Computation*, **2007**, 19, 2604-9	2.9	32
8	Exact simulation of integrate-and-fire models with synaptic conductances. *Neural Computation*, **2006**, 18, 2004-27	2.9	55
7	Adaptive exponential integrate-and-fire model as an effective description of neuronal activity. *Journal of Neurophysiology*, **2005**, 94, 3637-42	3.2	664
6	Dynamics of one-dimensional spiking neuron models. *Journal of Mathematical Biology*, **2004**, 48, 38-56	2	22
5	Reliability of spike timing is a general property of spiking model neurons. *Neural Computation*, **2003**, 15, 279-308	2.9	53
4	Rotation Numbers of Discontinuous Orientation-Preserving Circle Maps. *Set-Valued and Variational Analysis*, **2003**, 11, 359-371		7
3	Intracellular recording44-91		7
2	Modeling neuron–glia interactions with the Brian 2 simulator		1
1	Brian 2: an intuitive and efficient neural simulator		3