

Gilles Laurent

List of Publications by Year in descending order

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86
papers

14,891
citations

41344

49
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54911

84
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90
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90
docs citations

90
times ranked

7856
citing authors

#	ARTICLE	IF	CITATIONS
1	Impaired odour discrimination on desynchronization of odour-encoding neural assemblies. <i>Nature</i> , 1997, 390, 70-74.	27.8	912
2	Oscillations and Sparsening of Odor Representations in the Mushroom Body. <i>Science</i> , 2002, 297, 359-365.	12.6	712
3	painless, a <i>Drosophila</i> Gene Essential for Nociception. <i>Cell</i> , 2003, 113, 261-273.	28.9	696
4	Olfactory network dynamics and the coding of multidimensional signals. <i>Nature Reviews Neuroscience</i> , 2002, 3, 884-895.	10.2	639
5	Intensity versus Identity Coding in an Olfactory System. <i>Neuron</i> , 2003, 39, 991-1004.	8.1	563
6	Odour encoding by temporal sequences of firing in oscillating neural assemblies. <i>Nature</i> , 1996, 384, 162-166.	27.8	497
7	Transformation of Olfactory Representations in the <i>Drosophila</i> Antennal Lobe. <i>Science</i> , 2004, 303, 366-370.	12.6	497
8	Transient Dynamics for Neural Processing. <i>Science</i> , 2008, 321, 48-50.	12.6	447
9	Transient Dynamics versus Fixed Points in Odor Representations by Locust Antennal Lobe Projection Neurons. <i>Neuron</i> , 2005, 48, 661-673.	8.1	435
10	Dynamic Optimization of Odor Representations by Slow Temporal Patterning of Mitral Cell Activity. <i>Science</i> , 2001, 291, 889-894.	12.6	434
11	Role of GABAergic Inhibition in Shaping Odor-Evoked Spatiotemporal Patterns in the <i>Drosophila</i> Antennal Lobe. <i>Journal of Neuroscience</i> , 2005, 25, 9069-9079.	3.6	418
12	Odor Encoding as an Active, Dynamical Process: Experiments, Computation, and Theory. <i>Annual Review of Neuroscience</i> , 2001, 24, 263-297.	10.7	413
13	Distinct Mechanisms for Synchronization and Temporal Patterning of Odor-Encoding Neural Assemblies. <i>Science</i> , 1996, 274, 976-979.	12.6	391
14	Odor- and context-dependent modulation of mitral cell activity in behaving rats. <i>Nature Neuroscience</i> , 1999, 2, 1003-1009.	14.8	366
15	Olfactory Representations by <i>Drosophila</i> Mushroom Body Neurons. <i>Journal of Neurophysiology</i> , 2008, 99, 734-746.	1.8	357
16	Multiplicative computation in a visual neuron sensitive to looming. <i>Nature</i> , 2002, 420, 320-324.	27.8	351
17	Temporal Representations of Odors in an Olfactory Network. <i>Journal of Neuroscience</i> , 1996, 16, 3837-3847.	3.6	346
18	Dynamical representation of odors by oscillating and evolving neural assemblies. <i>Trends in Neurosciences</i> , 1996, 19, 489-496.	8.6	344

#	ARTICLE	IF	CITATIONS
19	Evolution of pallium, hippocampus, and cortical cell types revealed by single-cell transcriptomics in reptiles. <i>Science</i> , 2018, 360, 881-888.	12.6	344
20	Hebbian STDP in mushroom bodies facilitates the synchronous flow of olfactory information in locusts. <i>Nature</i> , 2007, 448, 709-713.	27.8	312
21	Complexity and the Nervous System. <i>Science</i> , 1999, 284, 96-98.	12.6	300
22	Short-term memory in olfactory network dynamics. <i>Nature</i> , 1999, 402, 664-668.	27.8	272
23	Who reads temporal information contained across synchronized and oscillatory spike trains?. <i>Nature</i> , 1998, 395, 693-698.	27.8	266
24	Using noise signature to optimize spike-sorting and to assess neuronal classification quality. <i>Journal of Neuroscience Methods</i> , 2002, 122, 43-57.	2.5	255
25	Computation of Object Approach by a Wide-Field, Motion-Sensitive Neuron. <i>Journal of Neuroscience</i> , 1999, 19, 1122-1141.	3.6	251
26	Model of Transient Oscillatory Synchronization in the Locust Antennal Lobe. <i>Neuron</i> , 2001, 30, 553-567.	8.1	219
27	Multiplexing using synchrony in the zebrafish olfactory bulb. <i>Nature Neuroscience</i> , 2004, 7, 862-871.	14.8	210
28	Disruption of GABA _A Receptors on GABAergic Interneurons Leads to Increased Oscillatory Power in the Olfactory Bulb Network. <i>Journal of Neurophysiology</i> , 2001, 86, 2823-2833.	1.8	207
29	Conditional modulation of spike-timing-dependent plasticity for olfactory learning. <i>Nature</i> , 2012, 482, 47-52.	27.8	201
30	Normalization for Sparse Encoding of Odors by a Wide-Field Interneuron. <i>Science</i> , 2011, 332, 721-725.	12.6	191
31	A Simple Connectivity Scheme for Sparse Coding in an Olfactory System. <i>Journal of Neuroscience</i> , 2007, 27, 1659-1669.	3.6	184
32	GABAergic synapses in the antennal lobe and mushroom body of the locust olfactory system. , 1996, 372, 487-514.		183
33	Slow waves, sharp waves, ripples, and REM in sleeping dragons. <i>Science</i> , 2016, 352, 590-595.	12.6	177
34	Encoding and Decoding of Overlapping Odor Sequences. <i>Neuron</i> , 2006, 51, 467-482.	8.1	162
35	Testing Odor Response Stereotypy in the <i>Drosophila</i> Mushroom Body. <i>Neuron</i> , 2008, 59, 1009-1023.	8.1	157
36	Model of Cellular and Network Mechanisms for Odor-Evoked Temporal Patterning in the Locust Antennal Lobe. <i>Neuron</i> , 2001, 30, 569-581.	8.1	137

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37	Intrinsic and Circuit Properties Favor Coincidence Detection for Decoding Oscillatory Input. Journal of Neuroscience, 2004, 24, 6037-6047.	3.6	120
38	Neural Encoding of Rapidly Fluctuating Odors. Neuron, 2009, 61, 570-586.	8.1	114
39	A claustrum in reptiles and its role in slow-wave sleep. Nature, 2020, 578, 413-418.	27.8	103
40	Invariance of Angular Threshold Computation in a Wide-Field Looming-Sensitive Neuron. Journal of Neuroscience, 2001, 21, 314-329.	3.6	100
41	Adaptive regulation of sparseness by feedforward inhibition. Nature Neuroscience, 2007, 10, 1176-1184.	14.8	92
42	Fast Odor Learning Improves Reliability of Odor Responses in the Locust Antennal Lobe. Neuron, 2005, 46, 483-492.	8.1	84
43	Olfactory processing: maps, time and codes. Current Opinion in Neurobiology, 1997, 7, 547-553.	4.2	83
44	Dynamics of Olfactory Bulb Input and Output Activity During Odor Stimulation in Zebrafish. Journal of Neurophysiology, 2004, 91, 2658-2669.	1.8	83
45	Relationship between Afferent and Central Temporal Patterns in the Locust Olfactory System. Journal of Neuroscience, 1999, 19, 381-390.	3.6	69
46	High-Resolution Three-Dimensional Extracellular Recording of Neuronal Activity With Microfabricated Electrode Arrays. Journal of Neurophysiology, 2009, 101, 1671-1678.	1.8	67
47	Multiplication and stimulus invariance in a looming-sensitive neuron. Journal of Physiology (Paris), 2004, 98, 19-34.	2.1	65
48	Central Generation of Grooming Motor Patterns and Interlimb Coordination in Locusts. Journal of Neuroscience, 1996, 16, 8079-8091.	3.6	63
49	Transfer characteristics of a thermosensory synapse in <i>Caenorhabditis elegans</i> . Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 9667-9672.	7.1	59
50	Looking for the roots of cortical sensory computation in three-layered cortices. Current Opinion in Neurobiology, 2015, 31, 119-126.	4.2	56
51	Encoding of Mixtures in a Simple Olfactory System. Neuron, 2013, 80, 1246-1262.	8.1	54
52	A Population of ascending intersegmental interneurons in the locust with mechanosensory inputs from a hind leg. Journal of Comparative Neurology, 1988, 275, 1-12.	1.6	53
53	Evolution of neuronal identity in the cerebral cortex. Current Opinion in Neurobiology, 2019, 56, 199-208.	4.2	50
54	Neural Encoding of Odors during Active Sampling and in Turbulent Plumes. Neuron, 2015, 88, 403-418.	8.1	47

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55	Evaluating a genetically encoded optical sensor of neural activity using electrophysiology in intact adult fruit flies. <i>Frontiers in Neural Circuits</i> , 2007, 1, 3.	2.8	45
56	Time-Dependent Activation of Feed-Forward Inhibition in a Looming-Sensitive Neuron. <i>Journal of Neurophysiology</i> , 2005, 94, 2150-2161.	1.8	44
57	Local Control of Leg Movements and Motor Patterns during Grooming in Locusts. <i>Journal of Neuroscience</i> , 1996, 16, 8067-8078.	3.6	43
58	Estimating firing rates from calcium signals in locust projection neurons in vivo. <i>Frontiers in Neural Circuits</i> , 2007, 1, 2.	2.8	43
59	Reliable Sequential Activation of Neural Assemblies by Single Pyramidal Cells in a Three-Layered Cortex. <i>Neuron</i> , 2019, 104, 353-369.e5.	8.1	35
60	Spatiotemporal Structure of Olfactory Inputs to the Mushroom Bodies. <i>Learning and Memory</i> , 1998, 5, 124-132.	1.3	34
61	The morphology of a population of thoracic intersegmental interneurons in the locust. <i>Journal of Comparative Neurology</i> , 1987, 256, 412-429.	1.6	33
62	Local circuits underlying excitation and inhibition of intersegmental interneurons in the locust. <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 1988, 162, 145-157.	1.6	31
63	Collision-avoidance: nature's many solutions. <i>Nature Neuroscience</i> , 1998, 1, 261-263.	14.8	31
64	Thoracic intersegmental interneurons in the locust with mechanoreceptive inputs from a leg. <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 1986, 159, 171-186.	1.6	30
65	Odor Images and Tunes. <i>Neuron</i> , 1996, 16, 473-476.	8.1	30
66	Spatial Information in a Non-retinotopic Visual Cortex. <i>Neuron</i> , 2018, 97, 164-180.e7.	8.1	28
67	On the Value of Reptilian Brains to Map the Evolution of the Hippocampal Formation. <i>Brain, Behavior and Evolution</i> , 2017, 90, 41-52.	1.7	27
68	Large-scale mapping of cortical synaptic projections with extracellular electrode arrays. <i>Nature Methods</i> , 2017, 14, 882-890.	19.0	26
69	Embryonic development of a population of spiking local interneurons in the locust (<i>Schistocerca</i>) Tj ETQq1 1 0.784314 rgBT ₂₅ /Overlook	1.6	25
70	The Organization and Role During Locomotion of the Proximal Musculature of the Cricket Foreleg I. Anatomy and Innervation. <i>Journal of Experimental Biology</i> , 1986, 123, 255-283.	1.7	24
71	GABA-like immunoreactivity in a population of locust intersegmental interneurons and their inputs. <i>Journal of Comparative Neurology</i> , 1990, 302, 761-767.	1.6	20
72	Parallel effects of joint receptors on motor neurones and intersegmental interneurons in the locust. <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 1987, 160, 341-353.	1.6	18

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73	Embryonic development of synapses on spiking local interneurons in locust. <i>Journal of Comparative Neurology</i> , 1992, 324, 213-236.	1.6	16
74	Rhythmic Modulation of the Responsiveness of Locust Sensory Local Interneurons by Walking Pattern Generating Networks. <i>Journal of Neurophysiology</i> , 1994, 71, 110-118.	1.8	16
75	Consensus-Based Sorting of Neuronal Spike Waveforms. <i>PLoS ONE</i> , 2016, 11, e0160494.	2.5	16
76	The many ways of building collision-sensitive neurons. <i>Trends in Neurosciences</i> , 1999, 22, 437-438.	8.6	14
77	Distribution of GABAergic synaptic terminals on the dendrites of locust spiking local interneurons. <i>Journal of Comparative Neurology</i> , 1993, 337, 461-470.	1.6	11
78	Comparative approaches to cortical microcircuits. <i>Current Opinion in Neurobiology</i> , 2016, 41, 24-30.	4.2	11
79	A simple method to reconstruct firing rates from dendritic calcium signals. <i>Frontiers in Neuroscience</i> , 2008, 2, 176-185.	2.8	10
80	Electric Times in Olfaction. <i>Neuron</i> , 2010, 67, 903-905.	8.1	6
81	What does 'understanding' mean?. <i>Nature Neuroscience</i> , 2000, 3, 1211-1211.	14.8	4
82	Dynamic representation of odours by oscillating neural assemblies. <i>Entomologia Experimentalis Et Applicata</i> , 1999, 91, 7-18.	1.4	3
83	Connectomics: a need for comparative studies. <i>E-Neuroforum</i> , 2016, 7, 54-55.	0.1	2
84	Connectomics: a need for comparative studies. <i>E-Neuroforum</i> , 2016, 22, .	0.1	0
85	Temporal Coding with Oscillatory Sequences of Firing. , 1998, , 303-307.		0
86	Dynamic representation of odours by oscillating neural assemblies. , 1999, , 7-18.		0