

Carmen C Canavier

List of Publications by Year in descending order

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90
papers

2,726
citations

159585

30
h-index

197818

49
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95
docs citations

95
times ranked

1721
citing authors

#	ARTICLE	IF	CITATIONS
1	Phase-Resetting Curves Determine Synchronization, Phase Locking, and Clustering in Networks of Neural Oscillators. <i>Journal of Neuroscience</i> , 2009, 29, 5218-5233.	3.6	140
2	Phase Resetting and Phase Locking in Hybrid Circuits of One Model and One Biological Neuron. <i>Biophysical Journal</i> , 2004, 87, 2283-2298.	0.5	119
3	Nonlinear dynamics in a model neuron provide a novel mechanism for transient synaptic inputs to produce long-term alterations of postsynaptic activity. <i>Journal of Neurophysiology</i> , 1993, 69, 2252-2257.	1.8	105
4	Simulation of the bursting activity of neuron R15 in <i>Aplysia</i> : role of ionic currents, calcium balance, and modulatory transmitters. <i>Journal of Neurophysiology</i> , 1991, 66, 2107-2124.	1.8	104
5	Calcium Dynamics Underlying Pacemaker-Like and Burst Firing Oscillations in Midbrain Dopaminergic Neurons: A Computational Study. <i>Journal of Neurophysiology</i> , 1999, 82, 2249-2261.	1.8	102
6	Pulse coupled oscillators and the phase resetting curve. <i>Mathematical Biosciences</i> , 2010, 226, 77-96.	1.9	101
7	Phase-resetting as a tool of information transmission. <i>Current Opinion in Neurobiology</i> , 2015, 31, 206-213.	4.2	98
8	Resonant Interneurons Can Increase Robustness of Gamma Oscillations. <i>Journal of Neuroscience</i> , 2015, 35, 15682-15695.	3.6	94
9	A Modeling Study Suggests Complementary Roles for GABAA and NMDA Receptors and the SK Channel in Regulating the Firing Pattern in Midbrain Dopamine Neurons. <i>Journal of Neurophysiology</i> , 2004, 91, 346-357.	1.8	83
10	Multiple modes of activity in a model neuron suggest a novel mechanism for the effects of neuromodulators. <i>Journal of Neurophysiology</i> , 1994, 72, 872-882.	1.8	82
11	Routes to chaos in a model of a bursting neuron. <i>Biophysical Journal</i> , 1990, 57, 1245-1251.	0.5	79
12	Phase response characteristics of model neurons determine which patterns are expressed in a ring circuit model of gait generation. <i>Biological Cybernetics</i> , 1997, 77, 367-380.	1.3	79
13	Control of multistability in ring circuits of oscillators. <i>Biological Cybernetics</i> , 1999, 80, 87-102.	1.3	75
14	An Increase in AMPA and a Decrease in SK Conductance Increase Burst Firing by Different Mechanisms in a Model of a Dopamine Neuron In Vivo. <i>Journal of Neurophysiology</i> , 2006, 96, 2549-2563.	1.8	68
15	A mathematical criterion based on phase response curves for stability in a ring of coupled oscillators. <i>Biological Cybernetics</i> , 1999, 80, 11-23.	1.3	66
16	Sodium dynamics underlying burst firing and putative mechanisms for the regulation of the firing pattern in midbrain dopamine neurons: a computational approach. <i>Journal of Computational Neuroscience</i> , 1999, 6, 49-69.	1.0	63
17	Regulation of firing frequency in a computational model of a midbrain dopaminergic neuron. <i>Journal of Computational Neuroscience</i> , 2010, 28, 389-403.	1.0	59
18	Functional Phase Response Curves: A Method for Understanding Synchronization of Adapting Neurons. <i>Journal of Neurophysiology</i> , 2009, 102, 387-398.	1.8	54

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19	Analysis of the effects of modulatory agents on a modeled bursting neuron: Dynamic interactions between voltage and calcium dependent systems. <i>Journal of Computational Neuroscience</i> , 1995, 2, 19-44.	1.0	48
20	Using phase resetting to predict 1:1 and 2:2 locking in two neuron networks in which firing order is not always preserved. <i>Journal of Computational Neuroscience</i> , 2008, 24, 37-55.	1.0	48
21	Pacemaker Rate and Depolarization Block in Nigral Dopamine Neurons: A Somatic Sodium Channel Balancing Act. <i>Journal of Neuroscience</i> , 2012, 32, 14519-14531.	3.6	47
22	Computational Model Predicts a Role for ERG Current in Repolarizing Plateau Potentials in Dopamine Neurons: Implications for Modulation of Neuronal Activity. <i>Journal of Neurophysiology</i> , 2007, 98, 3006-3022.	1.8	46
23	Computational Model of the Serotonergic Modulation of Sensory Neurons in <i>Aplysia</i> . <i>Journal of Neurophysiology</i> , 1999, 82, 2914-2935.	1.8	44
24	The Influence of Limit Cycle Topology on the Phase Resetting Curve. <i>Neural Computation</i> , 2002, 14, 1027-1057.	2.2	44
25	Dynamics from a Time Series: Can We Extract the Phase Resetting Curve from a Time Series?. <i>Biophysical Journal</i> , 2003, 84, 2919-2928.	0.5	43
26	Phase response curve. <i>Scholarpedia Journal</i> , 2006, 1, 1332.	0.3	43
27	Role of the Axon Initial Segment in the Control of Spontaneous Frequency of Nigral Dopaminergic Neurons <i>In Vivo</i> . <i>Journal of Neuroscience</i> , 2018, 38, 733-744.	3.6	41
28	Electrical Coupling Between Model Midbrain Dopamine Neurons: Effects on Firing Pattern and Synchrony. <i>Journal of Neurophysiology</i> , 2002, 87, 1526-1541.	1.8	39
29	Ether-a-go-go Related Gene Potassium Channels: What's All the Buzz About?. <i>Schizophrenia Bulletin</i> , 2006, 33, 1263-1269.	4.3	39
30	Functional characterization of ether-a-go-go-related gene potassium channels in midbrain dopamine neurons – implications for a role in depolarization block. <i>European Journal of Neuroscience</i> , 2012, 36, 2906-2916.	2.6	38
31	Effects of conduction delays on the existence and stability of one to one phase locking between two pulse-coupled oscillators. <i>Journal of Computational Neuroscience</i> , 2011, 31, 401-418.	1.0	33
32	Afferent synaptic drive of rat medial nucleus tractus solitarius neurons: dynamic simulation of graded vesicular mobilization, release, and non-NMDA receptor kinetics. <i>Journal of Neurophysiology</i> , 1995, 74, 1529-1548.	1.8	32
33	Multimodal Behavior in a Four Neuron Ring Circuit: Mode Switching. <i>IEEE Transactions on Biomedical Engineering</i> , 2004, 51, 205-218.	4.2	30
34	Predictions of Phase-Locking in Excitatory Hybrid Networks: Excitation Does Not Promote Phase-Locking in Pattern-Generating Networks as Reliably as Inhibition. <i>Journal of Neurophysiology</i> , 2009, 102, 69-84.	1.8	29
35	Phase Resetting Curves Allow for Simple and Accurate Prediction of Robust N:1 Phase Locking for Strongly Coupled Neural Oscillators. <i>Biophysical Journal</i> , 2009, 97, 59-73.	0.5	29
36	Short Conduction Delays Cause Inhibition Rather than Excitation to Favor Synchrony in Hybrid Neuronal Networks of the Entorhinal Cortex. <i>PLoS Computational Biology</i> , 2012, 8, e1002306.	3.2	29

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37	Mathematical analysis of depolarization block mediated by slow inactivation of fast sodium channels in midbrain dopamine neurons. <i>Journal of Neurophysiology</i> , 2014, 112, 2779-2790.	1.8	24
38	A Modeling Study Suggesting a Possible Pharmacological Target to Mitigate the Effects of Ethanol on Reward-Related Dopaminergic Signaling. <i>Journal of Neurophysiology</i> , 2008, 99, 2703-2707.	1.8	23
39	Synaptic and intrinsic determinants of the phase resetting curve for weak coupling. <i>Journal of Computational Neuroscience</i> , 2011, 30, 373-390.	1.0	23
40	Calcium dynamics control K-ATP channel-mediated bursting in substantia nigra dopamine neurons: a combined experimental and modeling study. <i>Journal of Neurophysiology</i> , 2018, 119, 84-95.	1.8	23
41	Intrinsic Mechanisms of Frequency Selectivity in the Proximal Dendrites of CA1 Pyramidal Neurons. <i>Journal of Neuroscience</i> , 2018, 38, 8110-8127.	3.6	23
42	Apamin-induced irregular firing in vitro and irregular single-spike firing observed in vivo in dopamine neurons is chaotic. <i>Neuroscience</i> , 2001, 104, 829-840.	2.3	22
43	Hippocampal CA1 pyramidal neurons exhibit type 1 phase-response curves and type 1 excitability. <i>Journal of Neurophysiology</i> , 2013, 109, 2757-2766.	1.8	20
44	Effect of phase response curve skew on synchronization with and without conduction delays. <i>Frontiers in Neural Circuits</i> , 2013, 7, 194.	2.8	18
45	Kinetics and Connectivity Properties of Parvalbumin- and Somatostatin-Positive Inhibition in Layer 2/3 Medial Entorhinal Cortex. <i>ENeuro</i> , 2022, 9, ENEURO.0441-21.2022.	1.9	18
46	Stability of two cluster solutions in pulse coupled networks of neural oscillators. <i>Journal of Computational Neuroscience</i> , 2011, 30, 427-445.	1.0	17
47	Ca ^v 1.3 calcium channels are full-range linear amplifiers of firing frequencies in lateral DA SN neurons. <i>Science Advances</i> , 2022, 8, .	10.3	17
48	Scaling of prediction error does not confirm chaotic dynamics underlying irregular firing using interspike intervals from midbrain dopamine neurons. <i>Neuroscience</i> , 2004, 129, 491-502.	2.3	15
49	Globally attracting synchrony in a network of oscillators with all-to-all inhibitory pulse coupling. <i>Physical Review E</i> , 2017, 95, 032215.	2.1	15
50	Implications of cellular models of dopamine neurons for disease. <i>Journal of Neurophysiology</i> , 2016, 116, 2815-2830.	1.8	14
51	Feedback control of variability in the cycle period of a central pattern generator. <i>Journal of Neurophysiology</i> , 2015, 114, 2741-2752.	1.8	13
52	Implications of Cellular Models of Dopamine Neurons for Schizophrenia. <i>Progress in Molecular Biology and Translational Science</i> , 2014, 123, 53-82.	1.7	12
53	Slow Noise in the Period of a Biological Oscillator Underlies Gradual Trends and Abrupt Transitions in Phasic Relationships in Hybrid Neural Networks. <i>PLoS Computational Biology</i> , 2014, 10, e1003622.	3.2	12
54	Phase response theory explains cluster formation in sparsely but strongly connected inhibitory neural networks and effects of jitter due to sparse connectivity. <i>Journal of Neurophysiology</i> , 2019, 121, 1125-1142.	1.8	12

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55	Morphological and Biophysical Determinants of the Intracellular and Extracellular Waveforms in Nigral Dopaminergic Neurons: A Computational Study. <i>Journal of Neuroscience</i> , 2018, 38, 8295-8310.	3.6	10
56	Stability analysis of entrainment by two periodic inputs with a fixed delay. <i>Neurocomputing</i> , 2003, 52-54, 59-63.	5.9	9
57	Responses of a bursting pacemaker to excitation reveal spatial segregation between bursting and spiking mechanisms. <i>Journal of Computational Neuroscience</i> , 2011, 31, 419-440.	1.0	9
58	A Mathematical Model of a Midbrain Dopamine Neuron Identifies Two Slow Variables Likely Responsible for Bursts Evoked by SK Channel Antagonists and Terminated by Depolarization Block. <i>Journal of Mathematical Neuroscience</i> , 2015, 5, 5.	2.4	9
59	Stochastic slowly adapting ionic currents may provide a decorrelation mechanism for neural oscillators by causing wander in the intrinsic period. <i>Journal of Neurophysiology</i> , 2016, 116, 1189-1198.	1.8	8
60	Inactivation mode of sodium channels defines the different maximal firing rates of conventional versus atypical midbrain dopamine neurons. <i>PLoS Computational Biology</i> , 2021, 17, e1009371.	3.2	8
61	Pulse coupled oscillators. <i>Scholarpedia Journal</i> , 2007, 2, 1331.	0.3	8
62	Dynamical Properties of Excitable Membranes. , 2004, , 161-196.		7
63	ANALYSIS OF CIRCUITS CONTAINING BURSTING NEURONS USING PHASE RESETTING CURVES. , 2005, , 175-200.		7
64	Stability criterion for a two-neuron reciprocally coupled network based on the phase and burst resetting curves. <i>Neurocomputing</i> , 2005, 65-66, 733-739.	5.9	7
65	Shunting Inhibition Improves Synchronization in Heterogeneous Inhibitory Interneuronal Networks with Type 1 Excitability Whereas Hyperpolarizing Inhibition Is Better for Type 2 Excitability. <i>ENeuro</i> , 2020, 7, ENEURO.0464-19.2020.	1.9	7
66	Phase response theory extended to nonoscillatory network components. <i>Physical Review E</i> , 2012, 85, 056208.	2.1	6
67	Effect of Heterogeneity and Noise on Cross Frequency Phase-Phase and Phase-Amplitude Coupling. <i>Network: Computation in Neural Systems</i> , 2014, 25, 38-62.	3.6	5
68	History of the Application of the Phase Resetting Curve to Neurons Coupled in a Pulsatile Manner. , 2012, , 73-91.		4
69	Pulse-Coupled Oscillators. , 2014, , 1-11.		4
70	Technique for eliminating nonessential components in the refinement of a model of dopamine neurons. <i>Neurocomputing</i> , 2006, 69, 1030-1034.	5.9	3
71	Predicting excitatory phase resetting curves in bursting neurons. <i>BMC Neuroscience</i> , 2008, 9, .	1.9	2
72	Chaotic Versus Stochastic Dynamics: A Critical Look at the Evidence for Nonlinear Sequence Dependent Structure in Dopamine Neurons. , 2009, , 121-128.		2

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73	Inclusion of noise in iterated firing time maps based on the phase response curve. <i>Physical Review E</i> , 2010, 81, 061923.	2.1	2
74	The Transcription Factor Shox2 Shapes Neuron Firing Properties and Suppresses Seizures by Regulation of Key Ion Channels in Thalamocortical Neurons. <i>Cerebral Cortex</i> , 2021, 31, 3194-3212.	2.9	2
75	Phase Resetting in the Presence of Noise and Heterogeneity. , 2011, , 104-117.		2
76	Long-Term Inactivation of Sodium Channels as a Mechanism of Adaptation in CA1 Pyramidal Neurons. <i>Journal of Neuroscience</i> , 2022, 42, 3768-3782.	3.6	2
77	Role of Nonlinear Dynamical Properties of a Modelled Bursting Neuron in Information Processing and Storage. <i>Animal Biology</i> , 1993, 44, 339-356.	0.4	1
78	Predicting n:1 locking in pulse coupled two-neuron networks using phase resetting theory. <i>BMC Neuroscience</i> , 2008, 9, .	1.9	1
79	PRC skewness determines synchronization properties of pulse coupled circuits with delay. <i>BMC Neuroscience</i> , 2010, 11, .	1.9	1
80	Mutually pulse-coupled neurons that do not synchronize in isolation can synchronize via reciprocal coupling with another neural population. <i>BMC Neuroscience</i> , 2010, 11, .	1.9	1
81	Maps based on the phase resetting curve explain spike statistics of coupled neural oscillators observed in the presence of noise. <i>BMC Neuroscience</i> , 2010, 11, .	1.9	1
82	Phase Resetting Curve Analysis of Global Synchrony, the Splay Mode and Clustering in N Neuron all to all Pulse-Coupled Networks. , 2012, , 453-473.		1
83	Reciprocal excitatory synapses convert pacemaker-like firing into burst firing in a simple model of coupled neurons. <i>Neurocomputing</i> , 2000, 32-33, 331-338.	5.9	0
84	The role of ERG current in pacemaking and bursting in dopamine neurons. <i>BMC Neuroscience</i> , 2011, 12, .	1.9	0
85	Theta entrainment of gamma modules: effects of heterogeneity and non-stationarity. <i>BMC Neuroscience</i> , 2012, 13, .	1.9	0
86	Fixed point topology and robustness to perturbations between pairs of coupled neurons. <i>BMC Neuroscience</i> , 2012, 13, .	1.9	0
87	Perturbations can distinguish underlying dynamics in phase-locked two-neuron networks. <i>BMC Neuroscience</i> , 2013, 14, .	1.9	0
88	Dynamic-Clamp-Constructed Hybrid Circuits for the Study of Synchronization Phenomena in Networks of Bursting Neurons. , 2009, , 261-273.		0
89	Saccadic Eye Movement and Cognition. <i>FASEB Journal</i> , 2018, 32, 782.5.	0.5	0
90	Pulse-Coupled Oscillators. , 2022, , 2931-2940.		0