Carmen C Canavier

List of Publications by Year
in descending order

90 papers	2,726 citations	159358 30 h-index	205818 48 g-index
95 all docs	95 docs citations	95 times ranked	1721 citing authors

#	Article	IF	Citations
1	Kinetics and Connectivity Properties of Parvalbumin- and Somatostatin-Positive Inhibition in Layer 2/3 Medial Entorhinal Cortex. ENeuro, 2022, 9, ENEURO.0441-21.2022.	0.9	18
2	Long-Term Inactivation of Sodium Channels as a Mechanism of Adaptation in CA1 Pyramidal Neurons. Journal of Neuroscience, 2022, 42, 3768-3782.	1.7	2
3	Pulse-Coupled Oscillators. , 2022, , 2931-2940.		0
4	Ca _v 1.3 calcium channels are full-range linear amplifiers of firing frequencies in lateral DA SN neurons. Science Advances, 2022, 8, .	4.7	17
5	The Transcription Factor Shox2 Shapes Neuron Firing Properties and Suppresses Seizures by Regulation of Key Ion Channels in Thalamocortical Neurons. Cerebral Cortex, 2021, 31, 3194-3212.	1.6	2
6	Inactivation mode of sodium channels defines the different maximal firing rates of conventional versus atypical midbrain dopamine neurons. PLoS Computational Biology, 2021, 17, e1009371.	1.5	8
7	Shunting Inhibition Improves Synchronization in Heterogeneous Inhibitory Interneuronal Networks with Type 1 Excitability Whereas Hyperpolarizing Inhibition Is Better for Type 2 Excitability. ENeuro, 2020, 7, ENEURO.0464-19.2020.	0.9	7
8	Phase response theory explains cluster formation in sparsely but strongly connected inhibitory neural networks and effects of jitter due to sparse connectivity. Journal of Neurophysiology, 2019, 121, 1125-1142.	0.9	12
9	Calcium dynamics control K-ATP channel-mediated bursting in substantia nigra dopamine neurons: a combined experimental and modeling study. Journal of Neurophysiology, 2018, 119, 84-95.	0.9	23
10	Role of the Axon Initial Segment in the Control of Spontaneous Frequency of Nigral Dopaminergic Neurons<i>In Vivo</i>. Journal of Neuroscience, 2018, 38, 733-744.	1.7	41
11	Intrinsic Mechanisms of Frequency Selectivity in the Proximal Dendrites of CA1 Pyramidal Neurons. Journal of Neuroscience, 2018, 38, 8110-8127.	1.7	23
12	Morphological and Biophysical Determinants of the Intracellular and Extracellular Waveforms in Nigral Dopaminergic Neurons: A Computational Study. Journal of Neuroscience, 2018, 38, 8295-8310.	1.7	10
13	Saccadic Eye Movement and Cognition. FASEB Journal, 2018, 32, 782.5.	0.2	0
14	Globally attracting synchrony in a network of oscillators with all-to-all inhibitory pulse coupling. Physical Review E, 2017, 95, 032215.	0.8	15
15	Implications of cellular models of dopamine neurons for disease. Journal of Neurophysiology, 2016, 116, 2815-2830.	0.9	14
16	Stochastic slowly adapting ionic currents may provide a decorrelation mechanism for neural oscillators by causing wander in the intrinsic period. Journal of Neurophysiology, 2016, 116, 1189-1198.	0.9	8
17	Feedback control of variability in the cycle period of a central pattern generator. Journal of Neurophysiology, 2015, 114, 2741-2752.	0.9	13
18	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. Journal of Mathematical Neuroscience, 2015, 5, 5.	2.4	9

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19	Resonant Interneurons Can Increase Robustness of Gamma Oscillations. Journal of Neuroscience, 2015, 35, 15682-15695.	1.7	94
20	Phase-resetting as a tool of information transmission. Current Opinion in Neurobiology, 2015, 31, 206-213.	2.0	98
21	Implications of Cellular Models of Dopamine Neurons for Schizophrenia. Progress in Molecular Biology and Translational Science, 2014, 123, 53-82.	0.9	12
22	Slow Noise in the Period of a Biological Oscillator Underlies Gradual Trends and Abrupt Transitions in Phasic Relationships in Hybrid Neural Networks. PLoS Computational Biology, 2014, 10, e1003622.	1.5	12
23	Mathematical analysis of depolarization block mediated by slow inactivation of fast sodium channels in midbrain dopamine neurons. Journal of Neurophysiology, 2014, 112, 2779-2790.	0.9	24
24	Pulse-Coupled Oscillators. , 2014, , 1-11.		4
25	Effect of Heterogeneity and Noise on Cross Frequency Phase-Phase and Phase-Amplitude Coupling. Network: Computation in Neural Systems, 2014, 25, 38-62.	2.2	5
26	Perturbations can distinguish underlying dynamics in phase-locked two-neuron networks. BMC Neuroscience, 2013, 14, .	0.8	0
27	Hippocampal CA1 pyramidal neurons exhibit type 1 phase-response curves and type 1 excitability. Journal of Neurophysiology, 2013, 109, 2757-2766.	0.9	20
28	Effect of phase response curve skew on synchronization with and without conduction delays. Frontiers in Neural Circuits, 2013, 7, 194.	1.4	18
29	Pacemaker Rate and Depolarization Block in Nigral Dopamine Neurons: A Somatic Sodium Channel Balancing Act. Journal of Neuroscience, 2012, 32, 14519-14531.	1.7	47
30	Phase response theory extended to nonoscillatory network components. Physical Review E, 2012, 85, 056208.	0.8	6
31	History of the Application of the Phase Resetting Curve to Neurons Coupled in a Pulsatile Manner. , 2012, , 73-91.		4
32	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
33	Functional characterization of etherâ€Ãâ€goâ€goâ€related gene potassium channels in midbrain dopamine neurons â€“ implications for a role in depolarization block. European Journal of Neuroscience, 2012, 36, 2906-2916.	1.2	38
34	Theta entrainment of gamma modules: effects of heterogeneity and non-stationarity. BMC Neuroscience, 2012, 13, .	0.8	0
35	Fixed point topology and robustness to perturbations between pairs of coupled neurons. BMC Neuroscience, 2012, 13, .	0.8	0
36	Short Conduction Delays Cause Inhibition Rather than Excitation to Favor Synchrony in Hybrid Neuronal Networks of the Entorhinal Cortex. PLoS Computational Biology, 2012, 8, e1002306.	1.5	29

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37	Synaptic and intrinsic determinants of the phase resetting curve for weak coupling. Journal of Computational Neuroscience, 2011, 30, 373-390.	0.6	23
38	Stability of two cluster solutions in pulse coupled networks of neural oscillators. Journal of Computational Neuroscience, 2011, 30, 427-445.	0.6	17
39	Effects of conduction delays on the existence and stability of one to one phase locking between two pulse-coupled oscillators. Journal of Computational Neuroscience, 2011, 31, 401-418.	0.6	33
40	Responses of a bursting pacemaker to excitation reveal spatial segregation between bursting and spiking mechanisms. Journal of Computational Neuroscience, 2011, 31, 419-440.	0.6	9
41	The role of ERG current in pacemaking and bursting in dopamine neurons. BMC Neuroscience, 2011, 12, .	0.8	0
42	Phase Resetting in the Presence of Noise and Heterogeneity. , 2011, , 104-117.		2
43	Regulation of firing frequency in a computational model of a midbrain dopaminergic neuron. Journal of Computational Neuroscience, 2010, 28, 389-403.	0.6	59
44	PRC skewness determines synchronization properties of pulse coupled circuits with delay. BMC Neuroscience, 2010, 11, .	0.8	1
45	Mutually pulse-coupled neurons that do not synchronize in isolation can synchronize via reciprocal coupling with another neural population. BMC Neuroscience, 2010, 11, .	0.8	1
46	Maps based on the phase resetting curve explain spike statistics of coupled neural oscillators observed in the presence of noise. BMC Neuroscience, 2010, 11, .	0.8	1
47	Inclusion of noise in iterated firing time maps based on the phase response curve. Physical Review E, 2010, 81, 061923.	0.8	2
48	Pulse coupled oscillators and the phase resetting curve. Mathematical Biosciences, 2010, 226, 77-96.	0.9	101
49	Predictions of Phase-Locking in Excitatory Hybrid Networks: Excitation Does Not Promote Phase-Locking in Pattern-Generating Networks as Reliably as Inhibition. Journal of Neurophysiology, 2009, 102, 69-84.	0.9	29
50	Phase-Resetting Curves Determine Synchronization, Phase Locking, and Clustering in Networks of Neural Oscillators. Journal of Neuroscience, 2009, 29, 5218-5233.	1.7	140
51	Phase Resetting Curves Allow for Simple and Accurate Prediction of Robust N:1 Phase Locking for Strongly Coupled Neural Oscillators. Biophysical Journal, 2009, 97, 59-73.	0.2	29
52	Chaotic Versus Stochastic Dynamics: A Critical Look at the Evidence for Nonlinear Sequence Dependent Structure in Dopamine Neurons. , 2009, , 121-128.		2
53	Functional Phase Response Curves: A Method for Understanding Synchronization of Adapting Neurons. Journal of Neurophysiology, 2009, 102, 387-398.	0.9	54
54	Dynamic-Clamp-Constructed Hybrid Circuits for the Study of Synchronization Phenomena in Networks of Bursting Neurons. , 2009, , 261-273.		0

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55	Using phase resetting to predict 1:1 and 2:2 locking in two neuron networks in which firing order is not always preserved. Journal of Computational Neuroscience, 2008, 24, 37-55.	0.6	48
56	Predicting excitatory phase resetting curves in bursting neurons. BMC Neuroscience, 2008, 9, .	0.8	2
57	Predicting n:1 locking in pulse coupled two-neuron networks using phase resetting theory. BMC Neuroscience, 2008, 9, .	0.8	1
58	A Modeling Study Suggesting a Possible Pharmacological Target to Mitigate the Effects of Ethanol on Reward-Related Dopaminergic Signaling. Journal of Neurophysiology, 2008, 99, 2703-2707.	0.9	23
59	Computational Model Predicts a Role for ERG Current in Repolarizing Plateau Potentials in Dopamine Neurons: Implications for Modulation of Neuronal Activity. Journal of Neurophysiology, 2007, 98, 3006-3022.	0.9	46
60	Pulse coupled oscillators. Scholarpedia Journal, 2007, 2, 1331.	0.3	8
61	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. Journal of Neurophysiology, 2006, 96, 2549-2563.	0.9	68
62	Technique for eliminating nonessential components in the refinement of a model of dopamine neurons. Neurocomputing, 2006, 69, 1030-1034.	3.5	3
63	Ether-a-go-go Related Gene Potassium Channels: What's All the Buzz About?. Schizophrenia Bulletin, 2006, 33, 1263-1269.	2.3	39
64	Phase response curve. Scholarpedia Journal, 2006, 1, 1332.	0.3	43
65	ANALYSIS OF CIRCUITS CONTAINING BURSTING NEURONS USING PHASE RESETTING CURVES. , 2005, , 175-200.		7
66	Stability criterion for a two-neuron reciprocally coupled network based on the phase and burst resetting curves. Neurocomputing, 2005, 65-66, 733-739.	3.5	7
67	A Modeling Study Suggests Complementary Roles for GABAA and NMDA Receptors and the SK Channel in Regulating the Firing Pattern in Midbrain Dopamine Neurons. Journal of Neurophysiology, 2004, 91, 346-357.	0.9	83
68	Multimodal Behavior in a Four Neuron Ring Circuit: Mode Switching. IEEE Transactions on Biomedical Engineering, 2004, 51, 205-218.	2.5	30
69	Phase Resetting and Phase Locking in Hybrid Circuits of One Model and One Biological Neuron. Biophysical Journal, 2004, 87, 2283-2298.	0.2	119
70	Scaling of prediction error does not confirm chaotic dynamics underlying irregular firing using interspike intervals from midbrain dopamine neurons. Neuroscience, 2004, 129, 491-502.	1.1	15
71	Dynamical Properties of Excitable Membranes. , 2004, , 161-196.		7
72	Stability analysis of entrainment by two periodic inputs with a fixed delay. Neurocomputing, 2003, 52-54, 59-63.	3.5	9

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73	Dynamics from a Time Series: Can We Extract the Phase Resetting Curve from a Time Series?. Biophysical Journal, 2003, 84, 2919-2928.	0.2	43
74	The Influence of Limit Cycle Topology on the Phase Resetting Curve. Neural Computation, 2002, 14, 1027-1057.	1.3	44
75	Electrical Coupling Between Model Midbrain Dopamine Neurons: Effects on Firing Pattern and Synchrony. Journal of Neurophysiology, 2002, 87, 1526-1541.	0.9	39
76	Apamin-induced irregular firing in vitro and irregular single-spike firing observed in vivo in dopamine neurons is chaotic. Neuroscience, 2001, 104, 829-840.	1.1	22
77	Reciprocal excitatory synapses convert pacemaker-like firing into burst firing in a simple model of coupled neurons. Neurocomputing, 2000, 32-33, 331-338.	3.5	0
78	Calcium Dynamics Underlying Pacemaker-Like and Burst Firing Oscillations in Midbrain Dopaminergic Neurons: A Computational Study. Journal of Neurophysiology, 1999, 82, 2249-2261.	0.9	102
79	Computational Model of the Serotonergic Modulation of Sensory Neurons in<i>Aplysia</i>. Journal of Neurophysiology, 1999, 82, 2914-2935.	0.9	44
80	Sodium dynamics underlying burst firing and putative mechanisms for the regulation of the firing pattern in midbrain dopamine neurons: a computational approach. , 1999, 6, 49-69.		63
81	A mathematical criterion based on phase response curves for stability in a ring of coupled oscillators. Biological Cybernetics, 1999, 80, 11-23.	0.6	66
82	Control of multistability in ring circuits of oscillators. Biological Cybernetics, 1999, 80, 87-102.	0.6	75
83	Phase response characteristics of model neurons determine which patterns are expressed in a ring circuit model of gait generation. Biological Cybernetics, 1997, 77, 367-380.	0.6	79
84	Analysis of the effects of modulatory agents on a modeled bursting neuron: Dynamic interactions between voltage and calcium dependent systems. Journal of Computational Neuroscience, 1995, 2, 19-44.	0.6	48
85	Afferent synaptic drive of rat medial nucleus tractus solitarius neurons: dynamic simulation of graded vesicular mobilization, release, and non-NMDA receptor kinetics. Journal of Neurophysiology, 1995, 74, 1529-1548.	0.9	32
86	Multiple modes of activity in a model neuron suggest a novel mechanism for the effects of neuromodulators. Journal of Neurophysiology, 1994, 72, 872-882.	0.9	82
87	Role of Nonlinear Dynamical Properties of a Modelled Bursting Neuron in Information Processing and Storage. Animal Biology, 1993, 44, 339-356.	0.4	1
88	Nonlinear dynamics in a model neuron provide a novel mechanism for transient synaptic inputs to produce long-term alterations of postsynaptic activity. Journal of Neurophysiology, 1993, 69, 2252-2257.	0.9	105
89	Simulation of the bursting activity of neuron R15 in Aplysia: role of ionic currents, calcium balance, and modulatory transmitters. Journal of Neurophysiology, 1991, 66, 2107-2124.	0.9	104
90	Routes to chaos in a model of a bursting neuron. Biophysical Journal, 1990, 57, 1245-1251.	0.2	79