Martin Wechselberger

List of Publications by Year
in descending order

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59 papers	2,781 citations	201674 27 h-index	175258 52 g-index
65 all docs	65 docs citations	65 times ranked	1132 citing authors

#	Article	IF	Citations
1	Mixed-Mode Oscillations with Multiple Time Scales. SIAM Review, 2012, 54, 211-288.	9.5	431
2	Canards in R3. Journal of Differential Equations, 2001, 177, 419-453.	2.2	271
3	Existence and Bifurcation of Canards in $mathbbR^3$ in the Case of a Folded Node. SIAM Journal on Applied Dynamical Systems, 2005, 4, 101-139.	1.6	222
4	Giant squid-hidden canard: the 3D geometry of the Hodgkinâ€“Huxley model. Biological Cybernetics, 2007, 97, 5-32.	1.3	129
5	Local analysis near a folded saddle-node singularity. Journal of Differential Equations, 2010, 248, 2841-2888.	2.2	115
6	Relaxation oscillations in R3. Journal of Differential Equations, 2004, 200, 69-104.	2.2	110
7	The selection of mixed-mode oscillations in a Hodgkin-Huxley model with multiple timescales. Chaos, 2008, 18, 015105.	2.5	88
8	Canard Induced Mixed-Mode Oscillations in a Medial Entorhinal Cortex Layer II Stellate Cell Model. SIAM Journal on Applied Dynamical Systems, 2008, 7, 1582-1611.	1.6	77
9	The Dynamic Range of Bursting in a Model Respiratory Pacemaker Network. SIAM Journal on Applied Dynamical Systems, 2005, 4, 1107-1139.	1.6	74
10	Ã€ propos de canards (Apropos canards). Transactions of the American Mathematical Society, 2012, 364, 3289-3309.	0.9	74
11	The Role of Cell Volume in the Dynamics of Seizure, Spreading Depression, and Anoxic Depolarization. PLoS Computational Biology, 2015, 11, e1004414.	3.2	72
12	Chaotic attractors of relaxation oscillators. Nonlinearity, 2006, 19, 701-720.	1.4	70
13	Canards, Clusters, and Synchronization in a Weakly Coupled Interneuron Model. SIAM Journal on Applied Dynamical Systems, 2009, 8, 253-278.	1.6	70
14	Mixed mode oscillations as a mechanism for pseudo-plateau bursting. Journal of Computational Neuroscience, 2010, 28, 443-458.	1.0	68
15	Ionic channels and conductance-based models for hypothalamic neuronal thermosensitivity. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2006, 291, R518-R529.	1.8	57
16	Multiple Timescales, Mixed Mode Oscillations and Canards in Models of Intracellular Calcium Dynamics. Journal of Nonlinear Science, 2011, 21, 639-683.	2.1	54
17	Multiple Geometric Viewpoints of Mixed Mode Dynamics Associated with Pseudo-plateau Bursting. SIAM Journal on Applied Dynamical Systems, 2013, 12, 789-830.	1.6	51
18	Excitable Neurons, Firing Threshold Manifolds and Canards. Journal of Mathematical Neuroscience, 2013, 3, 12.	2.4	46

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19	The dynamics underlying pseudo-plateau bursting in a pituitary cell model. Journal of Mathematical Neuroscience, 2011, 1, .	2.4	40
20	A geometric understanding of how fast activating potassium channels promote bursting in pituitary cells. Journal of Computational Neuroscience, 2014, 36, 259-278.	1.0	38
21	Bifurcations of mixed-mode oscillations in a stellate cell model. Physica D: Nonlinear Phenomena, 2009, 238, 1598-1614.	2.8	37
22	Neural Excitability and Singular Bifurcations. Journal of Mathematical Neuroscience, 2015, 5, 29.	2.4	37
23	Geometric Singular Perturbation Theory Beyond the Standard Form. Frontiers in Applied Dynamical Systems: Reviews and Tutorials, 2020, , .	0.5	34
24	Existence of Traveling Wave Solutions for a Model of Tumor Invasion. SIAM Journal on Applied Dynamical Systems, 2014, 13, 366-396.	1.6	30
25	Understanding anomalous delays in a model of intracellular calcium dynamics. Chaos, 2010, 20, 045104.	2.5	29
26	Folds, canards and shocks in advectionâ€“reactionâ€“diffusion models. Nonlinearity, 2010, 23, 1949-1969.	1.4	28
27	Canards. Scholarpedia Journal, 2007, 2, 1356.	0.3	28
28	Averaging, Folded Singularities, and Torus Canards: Explaining Transitions between Bursting and Spiking in a Coupled Neuron Model. SIAM Journal on Applied Dynamical Systems, 2015, 14, 1808-1844.	1.6	27
29	Electrical Waves in a One-Dimensional Model of Cardiac Tissue. SIAM Journal on Applied Dynamical Systems, 2008, 7, 1558-1581.	1.6	26
30	Canards of Folded Saddle-Node Type I. SIAM Journal on Mathematical Analysis, 2015, 47, 3235-3283.	1.9	26
31	Extending Melnikov theory to invariant manifolds on non-compact domains. Dynamical Systems, 2002, 17, 215-233.	0.4	24
32	Bifurcations of canard-induced mixed mode oscillations in a pituitary Lactotroph model. Discrete and Continuous Dynamical Systems, 2012, 32, 2879-2912.	0.9	22
33	Mixed mode oscillations in a conceptual climate model. Physica D: Nonlinear Phenomena, 2015, 292-293, 70-83.	2.8	21
34	Two-stroke relaxation oscillators. Nonlinearity, 2020, 33, 2364-2408.	1.4	20
35	Geometric desingularization of degenerate singularities in the presence of fast rotation: A new proof of known results for slow passage through Hopf bifurcations. Indagationes Mathematicae, 2016, 27, 1184-1203.	0.4	19
36	Canard Theory and Excitability. Lecture Notes in Mathematics, 2013, , 89-132.	0.2	18

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37	Numerical computation of an Evans function for travelling waves. Mathematical Biosciences, 2015, 266, 36-51.	1.9	17
38	Folded Saddles and Faux Canards. SIAM Journal on Applied Dynamical Systems, 2017, 16, 546-596.	1.6	16
39	Changes in the criticality of Hopf bifurcations due to certain model reduction techniques in systems with multiple timescales. Journal of Mathematical Neuroscience, 2011, 1, 9.	2.4	13
40	Singularly perturbed boundary-focus bifurcations. Journal of Differential Equations, 2021, 296, 412-492.	2.2	13
41	Novel solutions for a model of wound healing angiogenesis. Nonlinearity, 2014, 27, 2975-3003.	1.4	12
42	Computational Singular Perturbation Method for Nonstandard Slow-Fast Systems. SIAM Journal on Applied Dynamical Systems, 2020, 19, 994-1028.	1.6	12
43	Effects of quasi-steady-state reduction on biophysical models with oscillations. Journal of Theoretical Biology, 2016, 393, 16-31.	1.7	11
44	Transonic canards and stellar wind. Nonlinearity, 2017, 30, 1006-1033.	1.4	9
45	Shock-fronted travelling waves in a reactionâ€“diffusion model with nonlinear forwardâ€“backwardâ€“forward diffusion. Physica D: Nonlinear Phenomena, 2021, 423, 132916.	2.8	9
46	(In)stability of Travelling Waves in a Model of Haptotaxis. SIAM Journal on Applied Mathematics, 2020, 80, 1629-1653.	1.8	8
47	Singularly perturbed boundary-equilibrium bifurcations. Nonlinearity, 2021, 34, 7371-7414.	1.4	8
48	Homoclinic clusters and chaos associated with a folded node in a stellate cell model. Discrete and Continuous Dynamical Systems - Series S, 2009, 2, 829-850.	1.1	8
49	Local Theory for Spatio-Temporal Canards and Delayed Bifurcations. SIAM Journal on Mathematical Analysis, 2020, 52, 5703-5747.	1.9	7
50	Transonic Evaporation Waves in a Spherically Symmetric Nozzle. SIAM Journal on Mathematical Analysis, 2014, 46, 1472-1504.	1.9	4
51	Slow Unfoldings of Contact Singularities in Singularly Perturbed Systems Beyond the Standard Form. Journal of Nonlinear Science, 2020, 30, 3161-3198.	2.1	4
52	Multiple timescales and the parametrisation method in geometric singular perturbation theory. Nonlinearity, 2021, 34, 4163-4201.	1.4	3
53	Process-Oriented Geometric Singular Perturbation Theory and Calcium Dynamics. SIAM Journal on Applied Dynamical Systems, 2022, 21, 982-1029.	1.6	2
54	POINCARÃ‰ MAPS FOR RELAXATION OSCILLATIONS IN â„³ - INVARIANT MANIFOLDS, CANARDS AND TURNING POINTS. , 2005, , .		1

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55	Geometric Singular Perturbation Analysis of Bursting Oscillations in Pituitary Cells. Frontiers in Applied Dynamical Systems: Reviews and Tutorials, 2015, , 1-52.	0.5	1
56	A Coordinate-Independent Setup for GSPT. Frontiers in Applied Dynamical Systems: Reviews and Tutorials, 2020, , 41-60.	0.5	1
57	What We Did Not Discuss. Frontiers in Applied Dynamical Systems: Reviews and Tutorials, 2020, , 127-130.	0.5	0
58	Loss of Normal Hyperbolicity. Frontiers in Applied Dynamical Systems: Reviews and Tutorials, 2020, , 61-75.	0.5	0
59	On the stability of shocks in isothermal black hole accretion disks. Monthly Notices of the Royal Astronomical Society, 0, , .	4.4	0