Martin Wechselberger

List of Publications by Year
in descending order

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59 papers	2,781 citations	230014 27 h-index	198040 52 g-index
65 all docs	65 docs citations	65 times ranked	1267 citing authors

#	Article	IF	Citations
1	Process-Oriented Geometric Singular Perturbation Theory and Calcium Dynamics. SIAM Journal on Applied Dynamical Systems, 2022, 21, 982-1029.	0.7	2
2	Multiple timescales and the parametrisation method in geometric singular perturbation theory. Nonlinearity, 2021, 34, 4163-4201.	0.6	3
3	Singularly perturbed boundary-equilibrium bifurcations. Nonlinearity, 2021, 34, 7371-7414.	0.6	8
4	Shock-fronted travelling waves in a reactionâ€“diffusion model with nonlinear forwardâ€“backwardâ€“forward diffusion. Physica D: Nonlinear Phenomena, 2021, 423, 132916.	1.3	9
5	Singularly perturbed boundary-focus bifurcations. Journal of Differential Equations, 2021, 296, 412-492.	1.1	13
6	Local Theory for Spatio-Temporal Canards and Delayed Bifurcations. SIAM Journal on Mathematical Analysis, 2020, 52, 5703-5747.	0.9	7
7	Slow Unfoldings of Contact Singularities in Singularly Perturbed Systems Beyond the Standard Form. Journal of Nonlinear Science, 2020, 30, 3161-3198.	1.0	4
8	(In)stability of Travelling Waves in a Model of Haptotaxis. SIAM Journal on Applied Mathematics, 2020, 80, 1629-1653.	0.8	8
9	Two-stroke relaxation oscillators. Nonlinearity, 2020, 33, 2364-2408.	0.6	20
10	Computational Singular Perturbation Method for Nonstandard Slow-Fast Systems. SIAM Journal on Applied Dynamical Systems, 2020, 19, 994-1028.	0.7	12
11	Geometric Singular Perturbation Theory Beyond the Standard Form. Frontiers in Applied Dynamical Systems: Reviews and Tutorials, 2020, , .	0.5	34
12	What We Did Not Discuss. Frontiers in Applied Dynamical Systems: Reviews and Tutorials, 2020, , 127-130.	0.5	0
13	A Coordinate-Independent Setup for GSPT. Frontiers in Applied Dynamical Systems: Reviews and Tutorials, 2020, , 41-60.	0.5	1
14	Loss of Normal Hyperbolicity. Frontiers in Applied Dynamical Systems: Reviews and Tutorials, 2020, , 61-75.	0.5	0
15	Folded Saddles and Faux Canards. SIAM Journal on Applied Dynamical Systems, 2017, 16, 546-596.	0.7	16
16	Transonic canards and stellar wind. Nonlinearity, 2017, 30, 1006-1033.	0.6	9
17	Effects of quasi-steady-state reduction on biophysical models with oscillations. Journal of Theoretical Biology, 2016, 393, 16-31.	0.8	11
18	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.	0.2	19

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19	Numerical computation of an Evans function for travelling waves. Mathematical Biosciences, 2015, 266, 36-51.	0.9	17
20	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.	0.7	27
21	Neural Excitability and Singular Bifurcations. Journal of Mathematical Neuroscience, 2015, 5, 29.	2.4	37
22	Canards of Folded Saddle-Node Type I. SIAM Journal on Mathematical Analysis, 2015, 47, 3235-3283.	0.9	26
23	Mixed mode oscillations in a conceptual climate model. Physica D: Nonlinear Phenomena, 2015, 292-293, 70-83.	1.3	21
24	The Role of Cell Volume in the Dynamics of Seizure, Spreading Depression, and Anoxic Depolarization. PLoS Computational Biology, 2015, 11, e1004414.	1.5	72
25	Geometric Singular Perturbation Analysis of Bursting Oscillations in Pituitary Cells. Frontiers in Applied Dynamical Systems: Reviews and Tutorials, 2015, , 1-52.	0.5	1
26	Novel solutions for a model of wound healing angiogenesis. Nonlinearity, 2014, 27, 2975-3003.	0.6	12
27	Transonic Evaporation Waves in a Spherically Symmetric Nozzle. SIAM Journal on Mathematical Analysis, 2014, 46, 1472-1504.	0.9	4
28	A geometric understanding of how fast activating potassium channels promote bursting in pituitary cells. Journal of Computational Neuroscience, 2014, 36, 259-278.	0.6	38
29	Existence of Traveling Wave Solutions for a Model of Tumor Invasion. SIAM Journal on Applied Dynamical Systems, 2014, 13, 366-396.	0.7	30
30	Excitable Neurons, Firing Threshold Manifolds and Canards. Journal of Mathematical Neuroscience, 2013, 3, 12.	2.4	46
31	Multiple Geometric Viewpoints of Mixed Mode Dynamics Associated with Pseudo-plateau Bursting. SIAM Journal on Applied Dynamical Systems, 2013, 12, 789-830.	0.7	51
32	Canard Theory and Excitability. Lecture Notes in Mathematics, 2013, , 89-132.	0.1	18
33	Ã€ propos de canards (Apropos canards). Transactions of the American Mathematical Society, 2012, 364, 3289-3309.	0.5	74
34	Mixed-Mode Oscillations with Multiple Time Scales. SIAM Review, 2012, 54, 211-288.	4.2	431
35	Bifurcations of canard-induced mixed mode oscillations in a pituitary Lactotroph model. Discrete and Continuous Dynamical Systems, 2012, 32, 2879-2912.	0.5	22
36	Multiple Timescales, Mixed Mode Oscillations and Canards in Models of Intracellular Calcium Dynamics. Journal of Nonlinear Science, 2011, 21, 639-683.	1.0	54

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37	The dynamics underlying pseudo-plateau bursting in a pituitary cell model. Journal of Mathematical Neuroscience, 2011, 1, .	2.4	40
38	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
39	Mixed mode oscillations as a mechanism for pseudo-plateau bursting. Journal of Computational Neuroscience, 2010, 28, 443-458.	0.6	68
40	Local analysis near a folded saddle-node singularity. Journal of Differential Equations, 2010, 248, 2841-2888.	1.1	115
41	Folds, canards and shocks in advectionâ€“reactionâ€“diffusion models. Nonlinearity, 2010, 23, 1949-1969.	0.6	28
42	Understanding anomalous delays in a model of intracellular calcium dynamics. Chaos, 2010, 20, 045104.	1.0	29
43	Bifurcations of mixed-mode oscillations in a stellate cell model. Physica D: Nonlinear Phenomena, 2009, 238, 1598-1614.	1.3	37
44	Canards, Clusters, and Synchronization in a Weakly Coupled Interneuron Model. SIAM Journal on Applied Dynamical Systems, 2009, 8, 253-278.	0.7	70
45	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.	0.6	8
46	Electrical Waves in a One-Dimensional Model of Cardiac Tissue. SIAM Journal on Applied Dynamical Systems, 2008, 7, 1558-1581.	0.7	26
47	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.	0.7	77
48	The selection of mixed-mode oscillations in a Hodgkin-Huxley model with multiple timescales. Chaos, 2008, 18, 015105.	1.0	88
49	Giant squid-hidden canard: the 3D geometry of the Hodgkinâ€“Huxley model. Biological Cybernetics, 2007, 97, 5-32.	0.6	129
50	Canards. Scholarpedia Journal, 2007, 2, 1356.	0.3	28
51	Chaotic attractors of relaxation oscillators. Nonlinearity, 2006, 19, 701-720.	0.6	70
52	Ionic channels and conductance-based models for hypothalamic neuronal thermosensitivity. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2006, 291, R518-R529.	0.9	57
53	The Dynamic Range of Bursting in a Model Respiratory Pacemaker Network. SIAM Journal on Applied Dynamical Systems, 2005, 4, 1107-1139.	0.7	74
54	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.	0.7	222

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55	POINCARÃ‰ MAPS FOR RELAXATION OSCILLATIONS IN â„³ - INVARIANT MANIFOLDS, CANARDS AND TURNING POINTS. , 2005, , .		1
56	Relaxation oscillations in R3. Journal of Differential Equations, 2004, 200, 69-104.	1.1	110
57	Extending Melnikov theory to invariant manifolds on non-compact domains. Dynamical Systems, 2002, 17, 215-233.	0.2	24
58	Canards in R3. Journal of Differential Equations, 2001, 177, 419-453.	1.1	271
59	On the stability of shocks in isothermal black hole accretion disks. Monthly Notices of the Royal Astronomical Society, 0, , .	1.6	0