

# Sebastian Walcher

## List of Publications by Year in descending order

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98  
papers

1,348  
citations

361413

20  
h-index

395702

33  
g-index

101  
all docs

101  
docs citations

101  
times ranked

515  
citing authors

#	ARTICLE	IF	CITATIONS
1	Quasi-Steady-State and Singular Perturbation Reduction for Reaction Networks with Noninteracting Species. <i>SIAM Journal on Applied Dynamical Systems</i> , 2022, 21, 782-816.	1.6	2
2	On the anti-quasi-steady-state conditions of enzyme kinetics. <i>Mathematical Biosciences</i> , 2022, 350, 108870.	1.9	8
3	On the quasi-steady-state approximation in an open Michaelis-Menten reaction mechanism. <i>AIMS Mathematics</i> , 2021, 6, 6781-6814.	1.6	11
4	Polynomial differential equations over the quaternions. <i>Journal of Differential Equations</i> , 2021, 282, 566-595.	2.2	3
5	Algorithmic Reduction of Biological Networks with Multiple Time Scales. <i>Mathematics in Computer Science</i> , 2021, 15, 499-534.	0.4	5
6	Tikhonov-Fenichel Reduction for Parameterized Critical Manifolds with Applications to Chemical Reaction Networks. <i>Journal of Nonlinear Science</i> , 2020, 30, 1355-1380.	2.1	2
7	Attracting and Natural Invariant Varieties for Polynomial Vector Fields and Control Systems. <i>Qualitative Theory of Dynamical Systems</i> , 2020, 19, 1.	1.7	1
8	Singular perturbations and scaling. <i>Discrete and Continuous Dynamical Systems - Series B</i> , 2020, 25, 1-29.	0.9	4
9	Coordinate-independent criteria for Hopf bifurcations. <i>Discrete and Continuous Dynamical Systems - Series S</i> , 2020, 13, 1319-1340.	1.1	2
10	Higher order normal modes. <i>Journal of Geometric Mechanics</i> , 2020, .	0.8	0
11	The Rosenzweig-MacArthur system via reduction of an individual based model. <i>Journal of Mathematical Biology</i> , 2019, 78, 413-439.	1.9	3
12	Hamiltonian Symmetry Reduction via Localizations: Theory and Application to a Barbell System. <i>Acta Applicandae Mathematicae</i> , 2019, 162, 121-143.	1.0	0
13	The SYMBIONT project. <i>ACM Communications in Computer Algebra</i> , 2019, 52, 67-70.	0.4	10
14	On planar polynomial vector fields with elementary first integrals. <i>Journal of Differential Equations</i> , 2019, 267, 4572-4588.	2.2	8
15	Eigenvectors of Tensors - A Primer. <i>Acta Applicandae Mathematicae</i> , 2019, 162, 165-183.	1.0	4
16	Coordinate-independent singular perturbation reduction for systems with three time scales. <i>Mathematical Biosciences and Engineering</i> , 2019, 16, 5062-5091.	1.9	8
17	Quasi-steady state reduction for the Michaelis-Menten reaction-diffusion system. <i>Journal of Mathematical Chemistry</i> , 2018, 56, 1759-1781.	1.5	4
18	A Coordinate-Independent Version of Hoppensteadt's Convergence Theorem. <i>Qualitative Theory of Dynamical Systems</i> , 2018, 17, 7-28.	1.7	2

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19	Theta functions on tube domains. <i>Abhandlungen Aus Dem Mathematischen Seminar Der Universitat Hamburg</i> , 2018, 88, 273-288.	0.2	1
20	Modeling of Zinc Dynamics in the Synaptic Cleft: Implications for Cadherin Mediated Adhesion and Synaptic Plasticity. <i>Frontiers in Molecular Neuroscience</i> , 2018, 11, 306.	2.9	17
21	Classical quasi-steady state reduction – A mathematical characterization. <i>Physica D: Nonlinear Phenomena</i> , 2017, 345, 11-26.	2.8	28
22	Orbit space reduction and localizations. <i>Indagationes Mathematicae</i> , 2016, 27, 1265-1278.	0.4	2
23	nD methods for 1D parameter-dependent systems. <i>Multidimensional Systems and Signal Processing</i> , 2015, 26, 1097-1108.	2.6	1
24	Determining “small parameters” for quasi-steady state. <i>Journal of Differential Equations</i> , 2015, 259, 1149-1180.	2.2	35
25	Minima of Invariant Functions: The Inverse Problem. <i>Acta Applicandae Mathematicae</i> , 2015, 137, 233-252.	1.0	0
26	Motion in a Symmetric Potential on the Hyperbolic Plane. <i>Canadian Journal of Mathematics</i> , 2015, 67, 450-480.	0.6	2
27	Modules of higher order invariants. <i>Proceedings of the American Mathematical Society</i> , 2014, 143, 531-542.	0.8	2
28	A constructive approach to quasi-steady state reductions. <i>Journal of Mathematical Chemistry</i> , 2014, 52, 2596-2626.	1.5	40
29	Local Darboux first integrals of analytic differential systems. <i>Bulletin Des Sciences Mathematiques</i> , 2014, 138, 71-88.	1.0	5
30	Morphisms and inverse problems for Darboux integrating factors. <i>Proceedings of the Royal Society of Edinburgh Section A: Mathematics</i> , 2013, 143, 1291-1302.	1.2	1
31	Dynamical systems and $\mathbb{Z}_2$ -symmetries. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2013, 46, 235204.	2.1	9
32	Quasi-Steady State: Searching for and Utilizing Small Parameters. <i>Springer Proceedings in Mathematics and Statistics</i> , 2013, , 153-178.	0.2	12
33	A note on global asymptotic stability of nonautonomous master equations. <i>Discrete and Continuous Dynamical Systems - Series B</i> , 2013, 18, 2143-2149.	0.9	1
34	A generalization of $\mathbb{Z}_2$ -symmetry reduction for systems of ODEs: $\mathbb{Z}_2$ -symmetries. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2012, 45, 355205.	2.1	17
35	A note on the kinetics of suicide substrates. <i>Journal of Mathematical Chemistry</i> , 2012, 50, 1373-1377.	1.5	4
36	Computing quasi-steady state reductions. <i>Journal of Mathematical Chemistry</i> , 2012, 50, 1495-1513.	1.5	26

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37	Controlled Invariant Hypersurfaces of Polynomial Control Systems. Qualitative Theory of Dynamical Systems, 2012, 11, 145-158.	1.7	14
38	Inverse Problems in Darboux's Theory of Integrability. Acta Applicandae Mathematicae, 2012, 120, 101-126.	1.0	9
39	First integrals of local analytic differential systems. Bulletin Des Sciences Mathematiques, 2012, 136, 342-359.	1.0	30
40	Perturbative Expansions, Convergence of. , 2012, , 1389-1399.		1
41	Invariant sets forced by symmetry. Journal of Geometric Mechanics, 2012, 4, 271-296.	0.8	5
42	Tikhonov's theorem and quasi-steady state. Discrete and Continuous Dynamical Systems - Series B, 2011, 16, 945-961.	0.9	27
43	On a Class of Deterministic Population Models with Stochastic Foundation. Bulletin of Mathematical Biology, 2011, 73, 1559-1582.	1.9	5
44	The function of 7D-cadherins: a mathematical model predicts physiological importance for water transport through simple epithelia. Theoretical Biology and Medical Modelling, 2011, 8, 18.	2.1	8
45	Darboux integrating factors: Inverse problems. Journal of Differential Equations, 2011, 250, 1-25.	2.2	8
46	Quasi-Steady State and Nearly Invariant Sets. SIAM Journal on Applied Mathematics, 2009, 70, 1341-1363.	1.8	17
47	Inverse problems for invariant algebraic curves: explicit computations. Proceedings of the Royal Society of Edinburgh Section A: Mathematics, 2009, 139, 287-302.	1.2	24
48	Reduction and reconstruction for symmetric ordinary differential equations. Journal of Differential Equations, 2008, 244, 1810-1839.	2.2	12
49	Qualitative properties and stabilizability of a model for blood thrombin formation. Journal of Mathematical Analysis and Applications, 2008, 346, 218-226.	1.0	7
50	Inverse problems for multiple invariant curves. Proceedings of the Royal Society of Edinburgh Section A: Mathematics, 2007, 137, 1197-1226.	1.2	16
51	Compact solitary waves in linearly elastic chains with non-smooth on-site potential. Journal of Physics A: Mathematical and Theoretical, 2007, 40, 4493-4509.	2.1	24
52	Quasi-steady state in the Michaelis-Menten system. Nonlinear Analysis: Real World Applications, 2007, 8, 1512-1535.	1.7	18
53	Embedding and splitting ordinary differential equations in normal form. Journal of Differential Equations, 2006, 224, 98-119.	2.2	15
54	Reducible Ordinary Differential Equations. Journal of Nonlinear Science, 2006, 16, 583-613.	2.1	5

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55	Exclusion and persistence in deterministic and stochastic chemostat models. <i>Journal of Differential Equations</i> , 2005, 217, 26-53.	2.2	237
56	The lipid/protein interface as xenobiotic target site. <i>FEBS Journal</i> , 2005, 272, 2399-2406.	4.7	1
57	Normal Forms of Maps: Formal and Algebraic Aspects. <i>Acta Applicandae Mathematicae</i> , 2005, 87, 123-146.	1.0	32
58	Dimension Increase and Splitting for Poincaré-Dulac Normal Forms. <i>Journal of Nonlinear Mathematical Physics</i> , 2005, 12, 327.	1.3	10
59	What an Effective Criterion of Separability says about the Calogero Type Systems. <i>Journal of Nonlinear Mathematical Physics</i> , 2005, 12, 535.	1.3	4
60	Practical normal form computations for vector fields. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2004, 84, 472-482.	1.6	5
61	On comparison systems for ordinary differential equations. <i>Journal of Mathematical Analysis and Applications</i> , 2004, 299, 157-173.	1.0	28
62	Estimates in deterministic fate modelling of environmental chemicals. <i>Environmental Modelling and Software</i> , 2003, 18, 929-936.	4.5	6
63	Analysis of nuclear targeting activities of transport signals in the human immunodeficiency virus Rev protein. <i>Experimental Cell Research</i> , 2003, 291, 484-501.	2.6	12
64	ON THE ZEROS OF POLYNOMIALS OVER QUATERNIONS. <i>Communications in Algebra</i> , 2002, 30, 4007-4018.	0.6	18
65	On Normal Form Computations. , 2002, , 309-325.		3
66	Error Estimates for Linear Compartmental Systems. <i>SIAM Journal on Matrix Analysis and Applications</i> , 2002, 23, 1013-1024.	1.4	3
67	Lie algebras with finite-dimensional polynomial centralizer. <i>Journal of Mathematical Analysis and Applications</i> , 2002, 269, 578-587.	1.0	1
68	Convergence of Normal Form Transformations: The Role of Symmetries. <i>Acta Applicandae Mathematicae</i> , 2002, 70, 95-111.	1.0	36
69	On the mean value of probability measures on circular graphs. <i>Resultate Der Mathematik</i> , 2001, 39, 58-90.	0.2	0
70	On Cooperative Systems with Respect to Arbitrary Orderings. <i>Journal of Mathematical Analysis and Applications</i> , 2001, 263, 543-554.	1.0	23
71	The Lipid/Protein Interface as Xenobiotic Target Site. <i>Journal of Biological Chemistry</i> , 2001, 276, 42191-42195.	3.4	6
72	On the Poincaré Problem. <i>Journal of Differential Equations</i> , 2000, 166, 51-78.	2.2	38

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73	On Convergent Normal Form Transformations in Presence of Symmetries. Journal of Mathematical Analysis and Applications, 2000, 244, 17-26.	1.0	22
74	Plane polynomial vector fields with prescribed invariant curves. Proceedings of the Royal Society of Edinburgh Section A: Mathematics, 2000, 130, 633-649.	1.2	32
75	On algebras of rank three. Communications in Algebra, 1999, 27, 3401-3438.	0.6	20
76	Multiplier systems for the modular group on the 27-dimensional exceptional domain. Communications in Algebra, 1998, 26, 1409-1417.	0.6	5
77	On a Class of Additive Group Actions on Affine Three-Space. Rocky Mountain Journal of Mathematics, 1998, 28, 463.	0.4	0
78	On Sums of Vector Fields. Resultate Der Mathematik, 1997, 31, 161-169.	0.2	5
79	Centralizers of locally nilpotent derivations. Journal of Pure and Applied Algebra, 1997, 120, 39-49.	0.6	7
80	Projections of Polynomial Vector Fields and the Poincaré Sphere. Journal of Differential Equations, 1997, 139, 22-40.	2.2	7
81	On Ordinary Differential Equations Admitting a Finite Linear Group of Symmetries. Journal of Mathematical Analysis and Applications, 1997, 216, 180-196.	1.0	12
82	A radical for arbitrary algebras. Communications in Algebra, 1995, 23, 3889-3914.	0.6	0
83	On Monocomposition Algebras. Proceedings of the American Mathematical Society, 1995, 123, 2305.	0.8	0
84	Symmetries and Convergence of Normalizing Transformations. Journal of Mathematical Analysis and Applications, 1994, 183, 571-576.	1.0	48
85	On a jordan subalgebra of commutative algebras. Communications in Algebra, 1994, 22, 4759-4772.	0.6	1
86	On Transformations into Normal Form. Journal of Mathematical Analysis and Applications, 1993, 180, 617-632.	1.0	36
87	Bernoulli algebras. Communications in Algebra, 1993, 21, 3503-3520.	0.6	0
88	On a class of inversions. Communications in Algebra, 1992, 20, 2371-2392.	0.6	1
89	On Bernstein algebras which are train algebras. Proceedings of the Edinburgh Mathematical Society, 1992, 35, 159-166.	0.3	11
90	On continuous time models in genetic and Bernstein algebras. Journal of Mathematical Biology, 1992, 31, 107-113.	1.9	4

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91	Algebras which satisfy a train equation for the first three plenary powers. Archiv Der Mathematik, 1991, 56, 547-551.	0.5	19
92	On differential equations in normal form. Mathematische Annalen, 1991, 291, 293-314.	1.4	71
93	Birational maps and a generalization of power-associative algebras. Communications in Algebra, 1991, 19, 2169-2194.	0.6	4
94	Bernstein algebras which are Jordan algebras. Archiv Der Mathematik, 1988, 50, 218-222.	0.5	40
95	Über homogene nilpotente Polynome. Abhandlungen Aus Dem Mathematischen Seminar Der Universität Hamburg, 1986, 56, 153-155.	0.2	0
96	Über polynomiale, insbesondere Riccatische, Differentialgleichungen mit Fundamentalsystemen. Mathematische Annalen, 1986, 275, 269-280.	1.4	6
97	A characterization of regular jordan pairs and its application to riccati differential equations. Communications in Algebra, 1986, 14, 1967-1978.	0.6	2
98	Invariant Algebraic Surfaces of Polynomial Vector Fields in Dimension Three. Journal of Dynamics and Differential Equations, 0, , 1.	1.9	0