

# 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	Exclusion and persistence in deterministic and stochastic chemostat models. <i>Journal of Differential Equations</i> , 2005, 217, 26-53.	2.2	237
2	On differential equations in normal form. <i>Mathematische Annalen</i> , 1991, 291, 293-314.	1.4	71
3	Symmetries and Convergence of Normalizing Transformations. <i>Journal of Mathematical Analysis and Applications</i> , 1994, 183, 571-576.	1.0	48
4	Bernstein algebras which are Jordan algebras. <i>Archiv Der Mathematik</i> , 1988, 50, 218-222.	0.5	40
5	A constructive approach to quasi-steady state reductions. <i>Journal of Mathematical Chemistry</i> , 2014, 52, 2596-2626.	1.5	40
6	On the Poincaré Problem. <i>Journal of Differential Equations</i> , 2000, 166, 51-78.	2.2	38
7	On Transformations into Normal Form. <i>Journal of Mathematical Analysis and Applications</i> , 1993, 180, 617-632.	1.0	36
8	Convergence of Normal Form Transformations: The Role of Symmetries. <i>Acta Applicandae Mathematicae</i> , 2002, 70, 95-111.	1.0	36
9	Determining "small parameters" for quasi-steady state. <i>Journal of Differential Equations</i> , 2015, 259, 1149-1180.	2.2	35
10	Plane polynomial vector fields with prescribed invariant curves. <i>Proceedings of the Royal Society of Edinburgh Section A: Mathematics</i> , 2000, 130, 633-649.	1.2	32
11	Normal Forms of Maps: Formal and Algebraic Aspects. <i>Acta Applicandae Mathematicae</i> , 2005, 87, 123-146.	1.0	32
12	First integrals of local analytic differential systems. <i>Bulletin Des Sciences Mathematiques</i> , 2012, 136, 342-359.	1.0	30
13	On comparison systems for ordinary differential equations. <i>Journal of Mathematical Analysis and Applications</i> , 2004, 299, 157-173.	1.0	28
14	Classical quasi-steady state reduction – A mathematical characterization. <i>Physica D: Nonlinear Phenomena</i> , 2017, 345, 11-26.	2.8	28
15	Tikhonov's theorem and quasi-steady state. <i>Discrete and Continuous Dynamical Systems - Series B</i> , 2011, 16, 945-961.	0.9	27
16	Computing quasi-steady state reductions. <i>Journal of Mathematical Chemistry</i> , 2012, 50, 1495-1513.	1.5	26
17	Compact solitary waves in linearly elastic chains with non-smooth on-site potential. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2007, 40, 4493-4509.	2.1	24
18	Inverse problems for invariant algebraic curves: explicit computations. <i>Proceedings of the Royal Society of Edinburgh Section A: Mathematics</i> , 2009, 139, 287-302.	1.2	24

#	ARTICLE	IF	CITATIONS
19	On Cooperative Systems with Respect to Arbitrary Orderings. <i>Journal of Mathematical Analysis and Applications</i> , 2001, 263, 543-554.	1.0	23
20	On Convergent Normal Form Transformations in Presence of Symmetries. <i>Journal of Mathematical Analysis and Applications</i> , 2000, 244, 17-26.	1.0	22
21	On algebras of rank three. <i>Communications in Algebra</i> , 1999, 27, 3401-3438.	0.6	20
22	Algebras which satisfy a train equation for the first three plenary powers. <i>Archiv Der Mathematik</i> , 1991, 56, 547-551.	0.5	19
23	ON THE ZEROS OF POLYNOMIALS OVER QUATERNIONS. <i>Communications in Algebra</i> , 2002, 30, 4007-4018.	0.6	18
24	Quasi-steady state in the Michaelis-Menten system. <i>Nonlinear Analysis: Real World Applications</i> , 2007, 8, 1512-1535.	1.7	18
25	Quasi-Steady State and Nearly Invariant Sets. <i>SIAM Journal on Applied Mathematics</i> , 2009, 70, 1341-1363.	1.8	17
26	A generalization of $\hat{L}$ -symmetry reduction for systems of ODEs: $\hat{L}$ -symmetries. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2012, 45, 355205.	2.1	17
27	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
28	Inverse problems for multiple invariant curves. <i>Proceedings of the Royal Society of Edinburgh Section A: Mathematics</i> , 2007, 137, 1197-1226.	1.2	16
29	Embedding and splitting ordinary differential equations in normal form. <i>Journal of Differential Equations</i> , 2006, 224, 98-119.	2.2	15
30	Controlled Invariant Hypersurfaces of Polynomial Control Systems. <i>Qualitative Theory of Dynamical Systems</i> , 2012, 11, 145-158.	1.7	14
31	On Ordinary Differential Equations Admitting a Finite Linear Group of Symmetries. <i>Journal of Mathematical Analysis and Applications</i> , 1997, 216, 180-196.	1.0	12
32	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
33	Reduction and reconstruction for symmetric ordinary differential equations. <i>Journal of Differential Equations</i> , 2008, 244, 1810-1839.	2.2	12
34	Quasi-Steady State: Searching for and Utilizing Small Parameters. <i>Springer Proceedings in Mathematics and Statistics</i> , 2013, , 153-178.	0.2	12
35	On Bernstein algebras which are train algebras. <i>Proceedings of the Edinburgh Mathematical Society</i> , 1992, 35, 159-166.	0.3	11
36	On the quasi-steady-state approximation in an open Michaelis-Menten reaction mechanism. <i>AIMS Mathematics</i> , 2021, 6, 6781-6814.	1.6	11

#	ARTICLE	IF	CITATIONS
37	Dimension Increase and Splitting for Poincaré-Dulac Normal Forms. <i>Journal of Nonlinear Mathematical Physics</i> , 2005, 12, 327.	1.3	10
38	The SYMBIONT project. <i>ACM Communications in Computer Algebra</i> , 2019, 52, 67-70.	0.4	10
39	Inverse Problems in Darboux's Theory of Integrability. <i>Acta Applicandae Mathematicae</i> , 2012, 120, 101-126.	1.0	9
40	Dynamical systems and $\mathbb{Z}$ -symmetries. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2013, 46, 235204.	2.1	9
41	The function of 7D-cadherins: a mathematical model predicts physiological importance for water transport through simple epithelia. <i>Theoretical Biology and Medical Modelling</i> , 2011, 8, 18.	2.1	8
42	Darboux integrating factors: Inverse problems. <i>Journal of Differential Equations</i> , 2011, 250, 1-25.	2.2	8
43	On planar polynomial vector fields with elementary first integrals. <i>Journal of Differential Equations</i> , 2019, 267, 4572-4588.	2.2	8
44	Coordinate-independent singular perturbation reduction for systems with three time scales. <i>Mathematical Biosciences and Engineering</i> , 2019, 16, 5062-5091.	1.9	8
45	On the anti-quasi-steady-state conditions of enzyme kinetics. <i>Mathematical Biosciences</i> , 2022, 350, 108870.	1.9	8
46	Centralizers of locally nilpotent derivations. <i>Journal of Pure and Applied Algebra</i> , 1997, 120, 39-49.	0.6	7
47	Projections of Polynomial Vector Fields and the Poincaré Sphere. <i>Journal of Differential Equations</i> , 1997, 139, 22-40.	2.2	7
48	Qualitative properties and stabilizability of a model for blood thrombin formation. <i>Journal of Mathematical Analysis and Applications</i> , 2008, 346, 218-226.	1.0	7
49	Über polynomiale, insbesondere Riccatische, Differentialgleichungen mit Fundamentalsystemen. <i>Mathematische Annalen</i> , 1986, 275, 269-280.	1.4	6
50	The Lipid/Protein Interface as Xenobiotic Target Site. <i>Journal of Biological Chemistry</i> , 2001, 276, 42191-42195.	3.4	6
51	Estimates in deterministic fate modelling of environmental chemicals. <i>Environmental Modelling and Software</i> , 2003, 18, 929-936.	4.5	6
52	On Sums of Vector Fields. <i>Resultate Der Mathematik</i> , 1997, 31, 161-169.	0.2	5
53	Multiplier systems for the modular group on the 27-dimensional exceptional domain. <i>Communications in Algebra</i> , 1998, 26, 1409-1417.	0.6	5
54	Practical normal form computations for vector fields. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2004, 84, 472-482.	1.6	5

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55	Reducible Ordinary Differential Equations. <i>Journal of Nonlinear Science</i> , 2006, 16, 583-613.	2.1	5
56	On a Class of Deterministic Population Models with Stochastic Foundation. <i>Bulletin of Mathematical Biology</i> , 2011, 73, 1559-1582.	1.9	5
57	Local Darboux first integrals of analytic differential systems. <i>Bulletin Des Sciences Mathematiques</i> , 2014, 138, 71-88.	1.0	5
58	Algorithmic Reduction of Biological Networks with Multiple Time Scales. <i>Mathematics in Computer Science</i> , 2021, 15, 499-534.	0.4	5
59	Invariant sets forced by symmetry. <i>Journal of Geometric Mechanics</i> , 2012, 4, 271-296.	0.8	5
60	Birational maps and a generalization of power-associative algebras. <i>Communications in Algebra</i> , 1991, 19, 2169-2194.	0.6	4
61	On continuous time models in genetic and Bernstein algebras. <i>Journal of Mathematical Biology</i> , 1992, 31, 107-113.	1.9	4
62	A note on the kinetics of suicide substrates. <i>Journal of Mathematical Chemistry</i> , 2012, 50, 1373-1377.	1.5	4
63	Quasi-steady state reduction for the Michaelis-Menten reaction-diffusion system. <i>Journal of Mathematical Chemistry</i> , 2018, 56, 1759-1781.	1.5	4
64	Eigenvectors of Tensors - A Primer. <i>Acta Applicandae Mathematicae</i> , 2019, 162, 165-183.	1.0	4
65	Singular perturbations and scaling. <i>Discrete and Continuous Dynamical Systems - Series B</i> , 2020, 25, 1-29.	0.9	4
66	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
67	On Normal Form Computations. , 2002, , 309-325.		3
68	Error Estimates for Linear Compartmental Systems. <i>SIAM Journal on Matrix Analysis and Applications</i> , 2002, 23, 1013-1024.	1.4	3
69	The Rosenzweig-MacArthur system via reduction of an individual based model. <i>Journal of Mathematical Biology</i> , 2019, 78, 413-439.	1.9	3
70	Polynomial differential equations over the quaternions. <i>Journal of Differential Equations</i> , 2021, 282, 566-595.	2.2	3
71	A characterization of regular Jordan pairs and its application to Riccati differential equations. <i>Communications in Algebra</i> , 1986, 14, 1967-1978.	0.6	2
72	Modules of higher order invariants. <i>Proceedings of the American Mathematical Society</i> , 2014, 143, 531-542.	0.8	2

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73	Orbit space reduction and localizations. <i>Indagationes Mathematicae</i> , 2016, 27, 1265-1278.	0.4	2
74	A Coordinate-Independent Version of Hoppensteadt's Convergence Theorem. <i>Qualitative Theory of Dynamical Systems</i> , 2018, 17, 7-28.	1.7	2
75	Tikhonov's 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
76	Motion in a Symmetric Potential on the Hyperbolic Plane. <i>Canadian Journal of Mathematics</i> , 2015, 67, 450-480.	0.6	2
77	Coordinate-independent criteria for Hopf bifurcations. <i>Discrete and Continuous Dynamical Systems - Series S</i> , 2020, 13, 1319-1340.	1.1	2
78	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
79	On a class of inversions. <i>Communications in Algebra</i> , 1992, 20, 2371-2392.	0.6	1
80	On a Jordan subalgebra of commutative algebras. <i>Communications in Algebra</i> , 1994, 22, 4759-4772.	0.6	1
81	Lie algebras with finite-dimensional polynomial centralizer. <i>Journal of Mathematical Analysis and Applications</i> , 2002, 269, 578-587.	1.0	1
82	The lipid/protein interface as xenobiotic target site. <i>FEBS Journal</i> , 2005, 272, 2399-2406.	4.7	1
83	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
84	nD methods for 1D parameter-dependent systems. <i>Multidimensional Systems and Signal Processing</i> , 2015, 26, 1097-1108.	2.6	1
85	Theta functions on tube domains. <i>Abhandlungen Aus Dem Mathematischen Seminar Der Universitat Hamburg</i> , 2018, 88, 273-288.	0.2	1
86	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
87	Perturbative Expansions, Convergence of. , 2012, , 1389-1399.		1
88	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
89	Äœber homogene nilpotente Polynome. <i>Abhandlungen Aus Dem Mathematischen Seminar Der Universitat Hamburg</i> , 1986, 56, 153-155.	0.2	0
90	Bernoulli algebras. <i>Communications in Algebra</i> , 1993, 21, 3503-3520.	0.6	0

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91	A radical for arbitrary algebras. <i>Communications in Algebra</i> , 1995, 23, 3889-3914.	0.6	0
92	On a Class of Additive Group Actions on Affine Three-Space. <i>Rocky Mountain Journal of Mathematics</i> , 1998, 28, 463.	0.4	0
93	On the mean value of probability measures on circular graphs. <i>Resultate Der Mathematik</i> , 2001, 39, 58-90.	0.2	0
94	Minima of Invariant Functions: The Inverse Problem. <i>Acta Applicandae Mathematicae</i> , 2015, 137, 233-252.	1.0	0
95	Hamiltonian Symmetry Reduction via Localizations: Theory and Application to a Barbell System. <i>Acta Applicandae Mathematicae</i> , 2019, 162, 121-143.	1.0	0
96	Invariant Algebraic Surfaces of Polynomial Vector Fields in Dimension Three. <i>Journal of Dynamics and Differential Equations</i> , 0, , 1.	1.9	0
97	Higher order normal modes. <i>Journal of Geometric Mechanics</i> , 2020, .	0.8	0
98	On Monocomposition Algebras. <i>Proceedings of the American Mathematical Society</i> , 1995, 123, 2305.	0.8	0