Winfried Auzinger

List of Publications by Year
in descending order

79 papers	570 citations	687363 13 h-index	752698 20 g-index
81 all docs	81 docs citations	81 times ranked	254 citing authors

#	Article	IF	Citations
1	On nonlinear singular BVPs with nonsmooth data. Part 2: Convergence of collocation methods. Applied Numerical Mathematics, 2022, 171, 149-175.	2.1	1
2	Efficient Magnus-type integrators for solar energy conversion in Hubbard models. Journal of Computational Mathematics and Data Science, 2022, 2, 100018.	2.3	1
3	Some Aspects on [numerical] Stability of Evolution Equations of Stiff Type; Use of Computer Algebra. , 2021, , .		0
4	Adaptive Time Propagation for Time-dependent SchrÃ¶dinger equations. International Journal of Applied and Computational Mathematics, 2021, 7, 6.	1.6	3
5	Efficient adaptive exponential time integrators for nonlinear SchrÃ¶dinger equations with nonlocal potential. Journal of Computational Mathematics and Data Science, 2021, 1, 100014.	2.3	1
6	Computable upper error bounds for Krylov approximations to matrix exponentials and associated $${varvec{varphi }}$$-functions. BIT Numerical Mathematics, 2020, 60, 157-197.	2.0	8
7	The Studying of Hydrogen Diffusion Non-Stationary Processes Near a Crack in the Field of Heterogeneous Mechanical Tensions for the Encapsulated MEMS Devices. , 2020, , .		0
8	Graphene quantum dot states near defects. Physical Review B, 2020, 102, .	3.2	4
9	Adaptive Numerics for Linear ODE Systems with Time-Dependent Data; Application in Photovoltaics. , 2020, , .		0
10	A Modified Gomory-Hu Algorithm with DWDM-Oriented Technology. Lecture Notes in Computer Science, 2020, , 547-554.	1.3	4
11	Adaptive Exponential Integrators for MCTDHF. Lecture Notes in Computer Science, 2020, , 557-565.	1.3	1
12	A Revised Gomory-Hu Algorithm Taking Account of Physical Unavailability of Network Channels. Communications in Computer and Information Science, 2020, , 3-13.	0.5	6
13	A Study of Anomalies in GPS Time Series via Polynomial Filtering. , 2020, , .		0
14	OMNET++ and Maple software environments for IT Bachelor studies. Procedia Computer Science, 2019, 155, 654-659.	2.0	6
15	Time adaptive Zassenhaus splittings for the SchrÃ¶dinger equation in the semiclassical regime. Applied Mathematics and Computation, 2019, 362, 124550.	2.2	1
16	Non-existence of generalized splitting methods with positive coefficients of order higher than four. Applied Mathematics Letters, 2019, 97, 48-52.	2.7	1
17	Symmetrized local error estimators for time-reversible one-step methods in nonlinear evolution equations. Journal of Computational and Applied Mathematics, 2019, 356, 339-357.	2.0	5
18	<i>A posteriori</i> error estimation for Magnus-type integrators. ESAIM: Mathematical Modelling and Numerical Analysis, 2019, 53, 197-218.	1.9	6

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19	Practical splitting methods for the adaptive integration of nonlinear evolution equations. PartÂII: Comparisons of local error estimation and step-selection strategies for nonlinear SchrÃ¶dinger and wave equations. Computer Physics Communications, 2019, 234, 55-71.	7.5	8
20	An Algorithm for Computing Coefficients of Words in Expressions Involving Exponentials and Its Application to the Construction of Exponential Integrators. Lecture Notes in Computer Science, 2019, , 197-214.	1.3	1
21	Shooting methods for state-dependent impulsive boundary value problems, with applications. Applied Numerical Mathematics, 2018, 128, 217-229.	2.1	6
22	An improved local error estimator for symmetric time-stepping schemes. Applied Mathematics Letters, 2018, 82, 106-110.	2.7	4
23	Adaptive high-order splitting methods for systems of nonlinear evolution equations with periodic boundary conditions. Numerical Algorithms, 2017, 75, 261-283.	1.9	6
24	Convergence of a Strang splitting finite element discretization for the SchrÃ¶dingerâ€“Poisson equation. ESAIM: Mathematical Modelling and Numerical Analysis, 2017, 51, 1245-1278.	1.9	5
25	Practical splitting methods for the adaptive integration of nonlinear evolution equations. Part I: Construction of optimized schemes and pairs of schemes. BIT Numerical Mathematics, 2017, 57, 55-74.	2.0	21
26	Reduced order of the local error of splitting for parabolic problems. AIP Conference Proceedings, 2017, , .	0.4	0
27	The BCH-Formula and Order Conditions for Splitting Methods. UNIPA Springer Series, 2017, , 71-83.	0.1	0
28	A Note on Similarity to Contraction for Stable Companion (2 Ã— 2)-Matrices. Ukrainian Mathematical Journal, 2016, 68, 448-457.	0.5	0
29	Adaptive splitting methods for nonlinear SchrÃ¶dinger equations in the semiclassical regime. Numerical Algorithms, 2016, 72, 1-35.	1.9	14
30	Setup of Order Conditions for Splitting Methods. Lecture Notes in Computer Science, 2016, , 30-42.	1.3	2
31	Symbolic Manipulation of Flows of Nonlinear Evolution Equations, with Application in the Analysis of Split-Step Time Integrators. Lecture Notes in Computer Science, 2016, , 43-57.	1.3	0
32	Defect-based local error estimators for high-order splitting methods involving three linear operators. Numerical Algorithms, 2015, 70, 61-91.	1.9	9
33	Representation of the local error for higher-order exponential splitting schemes involving two or three sub-operators. AIP Conference Proceedings, 2015, , .	0.4	0
34	Defect-based local error estimators for splitting methods, with application to SchrÃ¶dinger equations, Part III: The nonlinear case. Journal of Computational and Applied Mathematics, 2015, 273, 182-204.	2.0	13
35	Defect Correction Methods. , 2015, , 323-332.		1
36	Defect-based local error estimators for splitting methods, with application to SchrÃ¶dinger equations, Part II. Higher-order methods for linear problems. Journal of Computational and Applied Mathematics, 2014, 255, 384-403.	2.0	16

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37	Error estimation based on locally weighted defect for boundary value problems in second order ordinary differential equations. BIT Numerical Mathematics, 2014, 54, 873-900.	2.0	5
38	Local error structures and order conditions in terms of Lie elements for exponential splitting schemes. Opuscula Mathematica, 2014, 34, 243.	0.8	16
39	Identifying Tibio-Femoral Joint Kinematics: Individual Adjustment versus Numerical Robustness*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 819-824.	0.4	5
40	Convergence of rational multistep methods of Adams-PadÃ© type. BIT Numerical Mathematics, 2012, 52, 3-20.	2.0	1
41	Defect-based local error estimators for splitting methods, with application to SchrÃ¶dinger equations, Part I: The linear case. Journal of Computational and Applied Mathematics, 2012, 236, 2643-2659.	2.0	15
42	Fast stray field computation on tensor grids. Journal of Computational Physics, 2012, 231, 2840-2850.	3.8	23
43	An efficient asymptotically correct error estimator forÂcollocation solutions to singular index-1 DAEs. BIT Numerical Mathematics, 2011, 51, 43-65.	2.0	2
44	Knee joint kinematics: comparison of two optimization models with respect to data noise. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 111-112.	0.2	0
45	Rational multistep methods via modified Ï†j -functions. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 757-758.	0.2	0
46	A study of constrained models for the kinematic analysis of the human knee joint. Computer Methods in Biomechanics and Biomedical Engineering, 2011, 14, 77-79.	1.6	0
47	On the stability and error structure of BDF schemes applied to linear parabolic evolution equations. BIT Numerical Mathematics, 2010, 50, 455-480.	2.0	1
48	Reconstructing the knee joint mechanism from kinematic data. Mathematical and Computer Modelling of Dynamical Systems, 2010, 16, 403-415.	2.2	5
49	Error Estimation Techniques Based on Defect Computation and Global Reconstruction. , 2010, , .		0
50	Defect-based a Posteriori Error Estimation for Index 1 DAEs with a Singularity of the First Kind. , 2009, , .		0
51	Defectâ€based aâ€posteriori error estimation for differentialâ€algebraic equations. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1023101-1023102.	0.2	1
52	Efficient mesh selection for collocation methods applied to singular BVPs. Journal of Computational and Applied Mathematics, 2005, 180, 213-227.	2.0	13
53	New a posteriori error estimates for singular boundary value problems. Numerical Algorithms, 2005, 40, 79-100.	1.9	7
54	Modified defect correction algorithms for ODEs. Part II: Stiff initial value problems. Numerical Algorithms, 2005, 40, 285-303.	1.9	7

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55	Analysis of a New Error Estimate for Collocation Methods Applied to Singular Boundary Value Problems. SIAM Journal on Numerical Analysis, 2005, 42, 2366-2386.	2.3	28
56	Modified Defect Correction Algorithms for ODEs. Part I: General Theory. Numerical Algorithms, 2004, 36, 135-155.	1.9	19
57	Collocation Methods for Boundary Value Problems with an Essential Singularity. Lecture Notes in Computer Science, 2004, , 347-354.	1.3	6
58	A Collocation Code for Singular Boundary Value Problems in Ordinary Differential Equations. Numerical Algorithms, 2003, 33, 27-39.	1.9	43
59	Sectorial operators and normalized numerical range. Applied Numerical Mathematics, 2003, 45, 367-388.	2.1	9
60	Efficient Collocation Schemes for Singular Boundary Value Problems. Numerical Algorithms, 2002, 31, 5-25.	1.9	36
61	Theory and Solution Techniques for Singular Boundary Value Problems in Ordinary Differential Equations. Lecture Notes in Computer Science, 2002, , 851-861.	1.3	1
62	A NOTE ON LYAPUNOV TRANSFORMATION AND EXPONENTIAL DECAY IN LINEAR ODE SYSTEMS. Mathematical Models and Methods in Applied Sciences, 2001, 11, 23-31.	3.3	2
63	Extending convergence theory for nonlinear stiff problems part I. BIT Numerical Mathematics, 1996, 36, 635-652.	2.0	9
64	Vienna contributions to the development of RK-methods. Applied Numerical Mathematics, 1996, 22, 35-49.	2.1	3
65	Kreiss resolvent conditions and strengthened Cauchy-Schwarz inequalities. Applied Numerical Mathematics, 1995, 18, 57-67.	2.1	4
66	Modern convergence theory for stiff initial-value problems. Journal of Computational and Applied Mathematics, 1993, 45, 5-16.	2.0	12
67	An extension of B-convergence for Runge-Kutta methods. Applied Numerical Mathematics, 1992, 9, 91-109.	2.1	11
68	On error structures and extrapolation for stiff systems, with application in the method of lines. Computing (Vienna/New York), 1990, 44, 331-356.	4.8	8
69	Asymptotic error expansions for stiff equations: Applications. Computing (Vienna/New York), 1990, 43, 223-253.	4.8	7
70	A note on convergence concepts for stiff problems. Computing (Vienna/New York), 1990, 44, 197-208.	4.8	16
71	Asymptotic Error Expansions for Stiff Equations: The Implicit Euler Scheme. SIAM Journal on Numerical Analysis, 1990, 27, 67-104.	2.3	18
72	Asymptotic error expansions for stiff equations: an analysis for the implicit midpoint and trapezoidal rules in the strongly stiff case. Numerische Mathematik, 1989, 56, 469-499.	1.9	33

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73	On the error structure of the implicit Euler scheme applied to stiff systems of differential equations. Computing (Vienna/New York), 1989, 43, 115-131.	4.8	3
74	Asymptotic Expansions of the Global Discretization Error for Stiff Problems. SIAM Journal on Scientific and Statistical Computing, 1989, 10, 950-963.	1.5	3
75	Defect corrections for multigrid solutions of the Dirichlet problem in general domains. Mathematics of Computation, 1987, 48, 471-471.	2.1	6
76	Defect correction for nonlinear elliptic difference equations. Numerische Mathematik, 1987, 51, 199-208.	1.9	6
77	IDeC â€" Convergence independent of error asymptotics. BIT Numerical Mathematics, 1987, 27, 350-367.	2.0	1
78	Accurate arithmetic results for decimal data on non-decimal computers. Computing (Vienna/New) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	4.8	8
79	Defect corrections and multigrid iterations. Lecture Notes in Mathematics, 1982, , 327-351.	0.2	12