

Winfried Auzinger

List of Publications by Year in descending order

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papers

570
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687363

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752698

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g-index

81
all docs

81
docs citations

81
times ranked

254
citing authors

#	ARTICLE	IF	CITATIONS
1	A Collocation Code for Singular Boundary Value Problems in Ordinary Differential Equations. Numerical Algorithms, 2003, 33, 27-39.	1.9	43
2	Efficient Collocation Schemes for Singular Boundary Value Problems. Numerical Algorithms, 2002, 31, 5-25.	1.9	36
3	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
4	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
5	Fast stray field computation on tensor grids. Journal of Computational Physics, 2012, 231, 2840-2850.	3.8	23
6	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
7	Modified Defect Correction Algorithms for ODEs. Part I: General Theory. Numerical Algorithms, 2004, 36, 135-155.	1.9	19
8	Asymptotic Error Expansions for Stiff Equations: The Implicit Euler Scheme. SIAM Journal on Numerical Analysis, 1990, 27, 67-104.	2.3	18
9	A note on convergence concepts for stiff problems. Computing (Vienna/New York), 1990, 44, 197-208.	4.8	16
10	Defect-based local error estimators for splitting methods, with application to Schrödinger equations, Part II. Higher-order methods for linear problems. Journal of Computational and Applied Mathematics, 2014, 255, 384-403.	2.0	16
11	Local error structures and order conditions in terms of Lie elements for exponential splitting schemes. Opuscula Mathematica, 2014, 34, 243.	0.8	16
12	Defect-based local error estimators for splitting methods, with application to Schrödinger equations, Part I: The linear case. Journal of Computational and Applied Mathematics, 2012, 236, 2643-2659.	2.0	15
13	Adaptive splitting methods for nonlinear Schrödinger equations in the semiclassical regime. Numerical Algorithms, 2016, 72, 1-35.	1.9	14
14	Efficient mesh selection for collocation methods applied to singular BVPs. Journal of Computational and Applied Mathematics, 2005, 180, 213-227.	2.0	13
15	Defect-based local error estimators for splitting methods, with application to Schrödinger equations, Part III: The nonlinear case. Journal of Computational and Applied Mathematics, 2015, 273, 182-204.	2.0	13
16	Defect corrections and multigrid iterations. Lecture Notes in Mathematics, 1982, , 327-351.	0.2	12
17	Modern convergence theory for stiff initial-value problems. Journal of Computational and Applied Mathematics, 1993, 45, 5-16.	2.0	12
18	An extension of B-convergence for Runge-Kutta methods. Applied Numerical Mathematics, 1992, 9, 91-109.	2.1	11

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19	Extending convergence theory for nonlinear stiff problems part I. BIT Numerical Mathematics, 1996, 36, 635-652.	2.0	9
20	Sectorial operators and normalized numerical range. Applied Numerical Mathematics, 2003, 45, 367-388.	2.1	9
21	Defect-based local error estimators for high-order splitting methods involving three linear operators. Numerical Algorithms, 2015, 70, 61-91.	1.9	9
22	Accurate arithmetic results for decimal data on non-decimal computers. Computing (Vienna/New York), 1990, 44, 331-356.	4.8	8
23	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
24	Practical splitting methods for the adaptive integration of nonlinear evolution equations. Part II: Comparisons of local error estimation and step-selection strategies for nonlinear Schrödinger and wave equations. Computer Physics Communications, 2019, 234, 55-71.	7.5	8
25	Computable upper error bounds for Krylov approximations to matrix exponentials and associated φ -functions. BIT Numerical Mathematics, 2020, 60, 157-197.	2.0	8
26	Asymptotic error expansions for stiff equations: Applications. Computing (Vienna/New York), 1990, 43, 223-253.	4.8	7
27	New a posteriori error estimates for singular boundary value problems. Numerical Algorithms, 2005, 40, 79-100.	1.9	7
28	Modified defect correction algorithms for ODEs. Part II: Stiff initial value problems. Numerical Algorithms, 2005, 40, 285-303.	1.9	7
29	Defect corrections for multigrid solutions of the Dirichlet problem in general domains. Mathematics of Computation, 1987, 48, 471-471.	2.1	6
30	Defect correction for nonlinear elliptic difference equations. Numerische Mathematik, 1987, 51, 199-208.	1.9	6
31	Adaptive high-order splitting methods for systems of nonlinear evolution equations with periodic boundary conditions. Numerical Algorithms, 2017, 75, 261-283.	1.9	6
32	Shooting methods for state-dependent impulsive boundary value problems, with applications. Applied Numerical Mathematics, 2018, 128, 217-229.	2.1	6
33	OMNET++ and Maple software environments for IT Bachelor studies. Procedia Computer Science, 2019, 155, 654-659.	2.0	6
34	A posteriori error estimation for Magnus-type integrators. ESAIM: Mathematical Modelling and Numerical Analysis, 2019, 53, 197-218.	1.9	6
35	Collocation Methods for Boundary Value Problems with an Essential Singularity. Lecture Notes in Computer Science, 2004, , 347-354.	1.3	6
36	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

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37	Reconstructing the knee joint mechanism from kinematic data. <i>Mathematical and Computer Modelling of Dynamical Systems</i> , 2010, 16, 403-415.	2.2	5
38	Identifying Tibio-Femoral Joint Kinematics: Individual Adjustment versus Numerical Robustness*. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2012, 45, 819-824.	0.4	5
39	Error estimation based on locally weighted defect for boundary value problems in second order ordinary differential equations. <i>BIT Numerical Mathematics</i> , 2014, 54, 873-900.	2.0	5
40	Convergence of a Strang splitting finite element discretization for the Schrödinger-Poisson equation. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 2017, 51, 1245-1278.	1.9	5
41	Symmetrized local error estimators for time-reversible one-step methods in nonlinear evolution equations. <i>Journal of Computational and Applied Mathematics</i> , 2019, 356, 339-357.	2.0	5
42	Kreiss resolvent conditions and strengthened Cauchy-Schwarz inequalities. <i>Applied Numerical Mathematics</i> , 1995, 18, 57-67.	2.1	4
43	An improved local error estimator for symmetric time-stepping schemes. <i>Applied Mathematics Letters</i> , 2018, 82, 106-110.	2.7	4
44	Graphene quantum dot states near defects. <i>Physical Review B</i> , 2020, 102, .	3.2	4
45	A Modified Gomory-Hu Algorithm with DWDM-Oriented Technology. <i>Lecture Notes in Computer Science</i> , 2020, , 547-554.	1.3	4
46	On the error structure of the implicit Euler scheme applied to stiff systems of differential equations. <i>Computing (Vienna/New York)</i> , 1989, 43, 115-131.	4.8	3
47	Asymptotic Expansions of the Global Discretization Error for Stiff Problems. <i>SIAM Journal on Scientific and Statistical Computing</i> , 1989, 10, 950-963.	1.5	3
48	Vienna contributions to the development of RK-methods. <i>Applied Numerical Mathematics</i> , 1996, 22, 35-49.	2.1	3
49	Adaptive Time Propagation for Time-dependent Schrödinger equations. <i>International Journal of Applied and Computational Mathematics</i> , 2021, 7, 6.	1.6	3
50	A NOTE ON LYAPUNOV TRANSFORMATION AND EXPONENTIAL DECAY IN LINEAR ODE SYSTEMS. <i>Mathematical Models and Methods in Applied Sciences</i> , 2001, 11, 23-31.	3.3	2
51	An efficient asymptotically correct error estimator for collocation solutions to singular index-1 DAEs. <i>BIT Numerical Mathematics</i> , 2011, 51, 43-65.	2.0	2
52	Setup of Order Conditions for Splitting Methods. <i>Lecture Notes in Computer Science</i> , 2016, , 30-42.	1.3	2
53	IDEc "Convergence independent of error asymptotics. <i>BIT Numerical Mathematics</i> , 1987, 27, 350-367.	2.0	1
54	Defect-based a posteriori error estimation for differential-algebraic equations. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2007, 7, 1023101-1023102.	0.2	1

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55	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
56	Convergence of rational multistep methods of Adams-Padé type. BIT Numerical Mathematics, 2012, 52, 3-20.	2.0	1
57	Time adaptive Zassenhaus splittings for the Schrödinger equation in the semiclassical regime. Applied Mathematics and Computation, 2019, 362, 124550.	2.2	1
58	Non-existence of generalized splitting methods with positive coefficients of order higher than four. Applied Mathematics Letters, 2019, 97, 48-52.	2.7	1
59	On nonlinear singular BVPs with nonsmooth data. Part 2: Convergence of collocation methods. Applied Numerical Mathematics, 2022, 171, 149-175.	2.1	1
60	Defect Correction Methods. , 2015, , 323-332.		1
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	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
63	Adaptive Exponential Integrators for MCTDHF. Lecture Notes in Computer Science, 2020, , 557-565.	1.3	1
64	Efficient adaptive exponential time integrators for nonlinear Schrödinger equations with nonlocal potential. Journal of Computational Mathematics and Data Science, 2021, 1, 100014.	2.3	1
65	Efficient Magnus-type integrators for solar energy conversion in Hubbard models. Journal of Computational Mathematics and Data Science, 2022, 2, 100018.	2.3	1
66	Defect-based a Posteriori Error Estimation for Index 1 DAEs with a Singularity of the First Kind. , 2009, , .		0
67	Error Estimation Techniques Based on Defect Computation and Global Reconstruction. , 2010, , .		0
68	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
69	Rational multistep methods via modified \tilde{t}_j -functions. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 757-758.	0.2	0
70	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
71	Representation of the local error for higher-order exponential splitting schemes involving two or three sub-operators. AIP Conference Proceedings, 2015, , .	0.4	0
72	A Note on Similarity to Contraction for Stable Companion (2×2) -Matrices. Ukrainian Mathematical Journal, 2016, 68, 448-457.	0.5	0

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73	Reduced order of the local error of splitting for parabolic problems. AIP Conference Proceedings, 2017, , .	0.4	0
74	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
75	Adaptive Numerics for Linear ODE Systems with Time-Dependent Data; Application in Photovoltaics. , 2020, , .		0
76	Some Aspects on [numerical] Stability of Evolution Equations of Stiff Type; Use of Computer Algebra. , 2021, , .		0
77	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
78	The BCH-Formula and Order Conditions for Splitting Methods. UNIPA Springer Series, 2017, , 71-83.	0.1	0
79	A Study of Anomalies in GPS Time Series via Polynomial Filtering. , 2020, , .		0