Kai Diethelm

List of Publications by Citations

55 papers	7,277 citations	24 h-index	63 g-index
63 ext. papers	8,437 ext. citations	2.3 avg, IF	6.64 L-index

#	Paper	IF	Citations
55	A Predictor-Corrector Approach for the Numerical Solution of Fractional Differential Equations. *Nonlinear Dynamics*, **2002**, 29, 3-22	5	1417
54	The Analysis of Fractional Differential Equations. *Lecture Notes in Mathematics*, **2010**,	0.4	1406
53	Analysis of Fractional Differential Equations. *Journal of Mathematical Analysis and Applications*, **2002**, 265, 229-248	1.1	955
52	Fractional Calculus **2012**,		724
51	Detailed Error Analysis for a Fractional Adams Method. *Numerical Algorithms*, **2004**, 36, 31-52	2.1	561
50	Algorithms for the fractional calculus: A selection of numerical methods. *Computer Methods in Applied Mechanics and Engineering*, **2005**, 194, 743-773	5.7	445
49	A fractional calculus based model for the simulation of an outbreak of dengue fever. *Nonlinear Dynamics*, **2013**, 71, 613-619	5	189
48	Multi-order fractional differential equations and their numerical solution. *Applied Mathematics and Computation*, **2004**, 154, 621-640	2.7	189
47	Score-P: A Joint Performance Measurement Run-Time Infrastructure for Periscope, Scalasca, TAU, and Vampir **2012**, 79-91		143
46	Numerical analysis for distributed-order differential equations. *Journal of Computational and Applied Mathematics*, **2009**, 225, 96-104	2.4	132
45	Numerical solution of fractional order differential equations by extrapolation. *Numerical Algorithms* , **1997**, 16, 231-253	2.1	112
44	On the Solution of Nonlinear Fractional-Order Differential Equations Used in the Modeling of Viscoplasticity **1999**, 217-224		99
43	Pitfalls in fast numerical solvers for fractional differential equations. *Journal of Computational and Applied Mathematics*, **2006**, 186, 482-503	2.4	96
42	Fractional Calculus **2016**,		89
41	Fractional calculus in biomechanics: a 3D viscoelastic model using regularized fractional derivative kernels with application to the human calcaneal fat pad. *Biomechanics and Modeling in Mechanobiology*, **2006**, 5, 203-15	3.8	82
40	Efficient Solution of Multi-Term Fractional Differential Equations Using P(EC)mE Methods. *Computing (Vienna/New York)*, **2003**, 71, 305-319	2.2	79
39	An investigation of some nonclassical methods for the numerical approximation of Caputo-type fractional derivatives. *Numerical Algorithms*, **2008**, 47, 361-390	2.1	66

38	An efficient parallel algorithm for the numerical solution of fractional differential equations. *Fractional Calculus and Applied Analysis*, **2011**, 14,	2.7	60
37	Why fractional derivatives with nonsingular kernels should not be used. *Fractional Calculus and Applied Analysis*, **2020**, 23, 610-634	2.7	42
36	An efficient algorithm for the evaluation of convolution integrals. *Computers and Mathematics With Applications*, **2006**, 51, 51-72	2.7	29
35	The mean value theorems and a Nagumo-type uniqueness theorem for Caputo fractional calculus. *Fractional Calculus and Applied Analysis*, **2012**, 15,	2.7	25
34	Asymptotic behavior of solutions of linear multi-order fractional differential systems. *Fractional Calculus and Applied Analysis*, **2017**, 20, 1165-1195	2.7	25
33	Volterra integral equations and fractional calculus: Do neighboring solutions intersect?. *Journal of Integral Equations and Applications*, **2012**, 24,	1.2	25
32	Gaussian quadrature formulae of the third kind for Cauchy principal value integrals: Basic properties and error estimates. *Journal of Computational and Applied Mathematics*, **1995**, 65, 97-114	2.4	24
31	Modified compound quadrature rules for strongly singular integrals. *Computing (Vienna/New York)*, **1994**, 52, 337-354	2.2	23
30	The READEX formalism for automatic tuning for energy efficiency. *Computing (Vienna/New York)*, **2017**, 99, 727-745	2.2	19
29	An Improvement of a Nonclassical Numerical Method for the Computation of Fractional Derivatives. *Journal of Vibration and Acoustics, Transactions of the ASME*, **2009**, 131,	1.6	18
28	Uniform convergence of optimal order quadrature rules for Cauchy principal value integrals. *Journal of Computational and Applied Mathematics*, **1994**, 56, 321-329	2.4	18
27	The Limits of Reproducibility in Numerical Simulation. *Computing in Science and Engineering*, **2012**, 14, 64-72	1.5	17
26	Good (and Not So Good) Practices in Computational Methods for Fractional Calculus. *Mathematics*, **2020**, 8, 324	2.3	14
25	Multi-term fractional differential equations, multi-order fractional differential systems and their numerical solution. *Journal Europeen Des Systemes Automatises*, **2008**, 42, 665-676	1.8	14
24	A method for the practical evaluation of the Hilbert transform on the real line. *Journal of Computational and Applied Mathematics*, **1999**, 112, 45-53	2.4	12
23	Peano kernels and bounds for the error constants of Gaussian and related quadrature rules for Cauchy principal value integrals. *Numerische Mathematik*, **1996**, 73, 53-63	2.2	12
22	Monotonicity of functions and sign changes of their Caputo derivatives. *Fractional Calculus and Applied Analysis*, **2016**, 19, 561-566	2.7	12
21	Fractional-order attractors synthesis via parameter switchings. *Communications in Nonlinear Science and Numerical Simulation*, **2010**, 15, 3745-3753	3.7	11

20	An extension of the well-posedness concept for fractional differential equations of Caputo type. *Applicable Analysis*, **2014**, 93, 2126-2135	0.8	9
19	BOUNDEDNESS AND UNIFORM NUMERICAL APPROXIMATION OF THE WEIGHTED HILBERT TRANSFORM ON THE REAL LINE. *Numerical Functional Analysis and Optimization*, **2001**, 22, 13-54	1	9
18	Interpolatory product quadratures for Cauchy principal value integrals with Freud weights. *Numerische Mathematik*, **1999**, 83, 87-105	2.2	9
17	Increasing the efficiency of shooting methods for terminal value problems of fractional order. *Journal of Computational Physics*, **2015**, 293, 135-141	4.1	8
16	Error bounds for spline-based quadrature methods for strongly singular integrals. *Journal of Computational and Applied Mathematics*, **1998**, 89, 257-261	2.4	8
15	A note on the well-posedness of terminal value problems for fractional differential equations. *Journal of Integral Equations and Applications*, **2018**, 30,	1.2	8
14	New error bounds for modified quadrature formulas for Cauchy principal value integrals. *Journal of Computational and Applied Mathematics*, **1997**, 82, 93-104	2.4	5
13	Error estimates for a quadrature rule for Cauchy principal value integrals. *Proceedings of Symposia in Applied Mathematics*, **1994**, 287-291		5
12	Trends, directions for further research, and some open problems of fractional calculus. *Nonlinear Dynamics*, **2022**, 107, 3245	5	4
11	Run-Time Exploitation of Application Dynamism for Energy-Efficient Exascale Computing **2020**, 113-126		4
10	A definiteness criterion for linear functionals and its application to Cauchy principal value quadrature. *Journal of Computational and Applied Mathematics*, **1996**, 66, 167-176	2.4	3
9	Error Bounds for the Numerical Integration of Functions with Limited Smoothness. *SIAM Journal on Numerical Analysis*, **2014**, 52, 877-879	2.4	2
8	Asymptotic behaviour of fixed-order error constants of modified quadrature formulae for Cauchy principal value integrals. *Journal of Inequalities and Applications*, **2000**, 2000, 428750	2.1	2
7	Approximation Methods and Stability of Singular Integral Equations for Freud Exponential Weights on the Line. *Journal of Integral Equations and Applications*, **2004**, 16,	1.2	2
6	Tools for assessing and optimizing the energy requirements of high performance scientific computing software. *Proceedings in Applied Mathematics and Mechanics*, **2016**, 16, 837-838	0.2	2
5	Upper and lower estimates for the separation of solutions to fractional differential equations. *Fractional Calculus and Applied Analysis*,1	2.7	1
4	A Hilbert Space Approach to Fractional Differential Equations. *Journal of Dynamics and Differential Equations*,1	1.3	0
3	A fractional version of the peano-sard theorem. *Numerical Functional Analysis and Optimization*, **1997**, 18, 745-757	1	

2 Saving Energy Using the READEX Methodology **2021**, 27-53

1 A New Diffusive Representation for Fractional Derivatives, Part II: Convergence Analysis of the Numerical Scheme. *Mathematics*, **2022**, 10, 1245 2.3