Mahmoud A Zaky

List of Publications by Year
in descending order

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71 papers	2,650 citations	201674 27 h-index	189892 50 g-index
72 all docs	72 docs citations	72 times ranked	904 citing authors

#	Article	IF	Citations
1	A method based on the Jacobi tau approximation for solving multi-term timeâ€“space fractional partial differential equations. Journal of Computational Physics, 2015, 281, 876-895.	3.8	256
2	Numerical simulation for two-dimensional variable-order fractional nonlinear cable equation. Nonlinear Dynamics, 2015, 80, 101-116.	5.2	190
3	On the formulation and numerical simulation of distributed-order fractional optimal control problems. Communications in Nonlinear Science and Numerical Simulation, 2017, 52, 177-189.	3.3	142
4	An improved collocation method for multi-dimensional spaceâ€“time variable-order fractional SchrÃ¶dinger equations. Applied Numerical Mathematics, 2017, 111, 197-218.	2.1	140
5	Highly accurate numerical schemes for multi-dimensional space variable-order fractional SchrÃ¶dinger equations. Computers and Mathematics With Applications, 2017, 73, 1100-1117.	2.7	99
6	Numerical algorithm for the variable-order Caputo fractional functional differential equation. Nonlinear Dynamics, 2016, 85, 1815-1823.	5.2	91
7	A Legendre collocation method for distributed-order fractional optimal control problems. Nonlinear Dynamics, 2018, 91, 2667-2681.	5.2	91
8	Shifted fractional-order Jacobi orthogonal functions: Application to a system of fractional differential equations. Applied Mathematical Modelling, 2016, 40, 832-845.	4.2	90
9	An improved tau method for the multi-dimensional fractional Rayleighâ€“Stokes problem for a heated generalized second grade fluid. Computers and Mathematics With Applications, 2018, 75, 2243-2258.	2.7	84
10	A space-time Legendre spectral tau method for the two-sided space-time Caputo fractional diffusion-wave equation. Numerical Algorithms, 2016, 71, 151-180.	1.9	78
11	Semi-implicit Galerkinâ€“Legendre Spectral Schemes for Nonlinear Time-Space Fractional Diffusionâ€“Reaction Equations with Smooth and Nonsmooth Solutions. Journal of Scientific Computing, 2020, 82, 1.	2.3	71
12	Existence, uniqueness and numerical analysis of solutions of tempered fractional boundary value problems. Applied Numerical Mathematics, 2019, 145, 429-457.	2.1	69
13	Recovery of high order accuracy in Jacobi spectral collocation methods for fractional terminal value problems with non-smooth solutions. Journal of Computational and Applied Mathematics, 2019, 357, 103-122.	2.0	68
14	An accurate spectral collocation method for nonlinear systems of fractional differential equations and related integral equations with nonsmooth solutions. Applied Numerical Mathematics, 2020, 154, 205-222.	2.1	58
15	A Legendre spectral quadrature tau method for the multi-term time-fractional diffusion equations. Computational and Applied Mathematics, 2018, 37, 3525-3538.	1.3	57
16	A fractionalâ€•order Jacobi Tau method for a class of timeâ€•fractional PDEs with variable coefficients. Mathematical Methods in the Applied Sciences, 2016, 39, 1765-1779.	2.3	53
17	A spectral framework for fractional variational problems based on fractional Jacobi functions. Applied Numerical Mathematics, 2018, 132, 51-72.	2.1	52
18	Global consistency analysis of L1-Galerkin spectral schemes for coupled nonlinear space-time fractional SchrÃ¶dinger equations. Applied Numerical Mathematics, 2020, 156, 276-302.	2.1	49

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19	Numerical simulation of multi-dimensional distributed-order generalized SchrÃ¶dinger equations. Nonlinear Dynamics, 2017, 89, 1415-1432.	5.2	47
20	Numerical Solution of the Two-Sided Spaceâ€“Time Fractional Telegraph Equation Via Chebyshev Tau Approximation. Journal of Optimization Theory and Applications, 2017, 174, 321-341.	1.5	46
21	Chebyshev spectral methods for multi-order fractional neutral pantograph equations. Nonlinear Dynamics, 2020, 100, 3785-3797.	5.2	46
22	Multi-dimensional spectral tau methods for distributed-order fractional diffusion equations. Computers and Mathematics With Applications, 2020, 79, 476-488.	2.7	45
23	Efficient Legendre spectral tau algorithm for solving the two-sided spaceâ€“time Caputo fractional advectionâ€“dispersion equation. JVC/Journal of Vibration and Control, 2016, 22, 2053-2068.	2.6	41
24	A priori error estimates of a Jacobi spectral method for nonlinear systems of fractional boundary value problems and related Volterra-Fredholm integral equations with smooth solutions. Numerical Algorithms, 2020, 84, 63-89.	1.9	36
25	Singularity preserving spectral collocation method for nonlinear systems of fractional differential equations with the right-sided Caputo fractional derivative. Journal of Computational and Applied Mathematics, 2021, 392, 113468.	2.0	33
26	An Efficient Operational Matrix Technique for Multidimensional Variable-Order Time Fractional Diffusion Equations. Journal of Computational and Nonlinear Dynamics, 2016, 11, .	1.2	32
27	Jacobi Spectral Galerkin Method for Distributed-Order Fractional Rayleighâ€“Stokes Problem for a Generalized Second Grade Fluid. Frontiers in Physics, 2020, 7, .	2.1	31
28	Graded mesh discretization for coupled system of nonlinear multi-term time-space fractional diffusion equations. Engineering With Computers, 2022, 38, 1351-1363.	6.1	28
29	A novel spectral Galerkin/Petrovâ€“Galerkin algorithm for the multi-dimensional spaceâ€“time fractional advectionâ€“diffusionâ€“reaction equations with nonsmooth solutions. Mathematics and Computers in Simulation, 2021, 190, 678-690.	4.4	27
30	A novel Jacob spectral method for multi-dimensional weakly singular nonlinear Volterra integral equations with nonsmooth solutions. Engineering With Computers, 2021, 37, 2623-2631.	6.1	25
31	Convergence analysis of an L1-continuous Galerkin method for nonlinear time-space fractional SchrÃ¶dinger equations. International Journal of Computer Mathematics, 2021, 98, 1420-1437.	1.8	24
32	High-order continuous Galerkin methods for multi-dimensional advectionâ€“reactionâ€“diffusion problems. Engineering With Computers, 2020, 36, 1813-1829.	6.1	23
33	An efficient dissipationâ€“preserving Legendreâ€“Galerkin spectral method for the Higgs boson equation in the de Sitter spacetime universe. Applied Numerical Mathematics, 2021, 160, 281-295.	2.1	23
34	NEW RECURSIVE APPROXIMATIONS FOR VARIABLE-ORDER FRACTIONAL OPERATORS WITH APPLICATIONS. Mathematical Modelling and Analysis, 2018, 23, 227-239.	1.5	23
35	Operational matrix approach for solving the variable-order nonlinear Galilei invariant advectionâ€“diffusion equation. Advances in Difference Equations, 2018, 2018, .	3.5	22
36	On the rate of convergence of spectral collocation methods for nonlinear multi-order fractional initial value problems. Computational and Applied Mathematics, 2019, 38, 1.	2.2	22

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37	Combined Galerkin spectral/finite difference method over graded meshes for the generalized nonlinear fractional SchrÃ¶dinger equation. Nonlinear Dynamics, 2021, 103, 2493-2507.	5.2	22
38	Numerical analysis of multi-term time-fractional nonlinear subdiffusion equations with time delay: What could possibly go wrong?. Communications in Nonlinear Science and Numerical Simulation, 2021, 96, 105672.	3.3	22
39	A general framework for the numerical analysis of high-order finite difference solvers for nonlinear multi-term time-space fractional partial differential equations with time delay. Applied Numerical Mathematics, 2021, 169, 108-121.	2.1	21
40	Spectral Solutions for Differential and Integral Equations with Varying Coefficients Using Classical Orthogonal Polynomials. Bulletin of the Iranian Mathematical Society, 2019, 45, 527-555.	1.0	20
41	Shifted fractional Jacobi spectral algorithm for solving distributed order time-fractional reactionâ€“diffusion equations. Computational and Applied Mathematics, 2019, 38, 1.	2.2	20
42	A Spectral Numerical Method for Solving Distributed-Order Fractional Initial Value Problems. Journal of Computational and Nonlinear Dynamics, 2018, 13, .	1.2	19
43	Alikhanov Legendreâ€”Galerkin Spectral Method for the Coupled Nonlinear Time-Space Fractional Ginzburgâ€“Landau Complex System. Mathematics, 2021, 9, 183.	2.2	18
44	The impact of memory effect on space fractional strong quantum couplers with tunable decay behavior and its numerical simulation. Scientific Reports, 2021, 11, 10275.	3.3	16
45	A unified spectral collocation method for nonlinear systems of multi-dimensional integral equations with convergence analysis. Applied Numerical Mathematics, 2021, 161, 27-45.	2.1	15
46	Two shifted Jacobi-Gauss collocation schemes for solving two-dimensional variable-order fractional Rayleigh-Stokes problem. Advances in Difference Equations, 2016, 2016, .	3.5	14
47	Logarithmic Jacobi collocation method for Caputoâ€“Hadamard fractional differential equations. Applied Numerical Mathematics, 2022, 181, 326-346.	2.1	13
48	Highâ€order finite difference/spectralâ€Galerkin approximations for the nonlinear timeâ€“space fractional Ginzburgâ€“Landau equation. Numerical Methods for Partial Differential Equations, 2023, 39, 4549-4574.	3.6	12
49	On the rate of convergence of the Legendre spectral collocation method for multi-dimensional nonlinear Volterraâ€“Fredholm integral equations. Communications in Theoretical Physics, 2021, 73, 025002.	2.5	12
50	On Romanovskiâ€“Jacobi polynomials and their related approximation results. Numerical Methods for Partial Differential Equations, 2020, 36, 1982-2017.	3.6	11
51	A note on a class of Caputo fractional differential equations with respect to another function. Mathematics and Computers in Simulation, 2022, 196, 289-295.	4.4	9
52	Long time behavior of Robin boundary sub-diffusion equation with fractional partial derivatives of Caputo type in differential and difference settings. Mathematics and Computers in Simulation, 2021, 190, 1370-1378.	4.4	8
53	A priori estimates to solutions of the time-fractional convectionâ€“diffusionâ€“reaction equation coupled with the Darcy system. Communications in Nonlinear Science and Numerical Simulation, 2022, 109, 106288.	3.3	8
54	Discrete fractional stochastic GrÃ¶nwall inequalities arising in the numerical analysis of multi-term fractional order stochastic differential equations. Mathematics and Computers in Simulation, 2022, 193, 269-279.	4.4	7

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55	An energy-preserving computational approach for the semilinear space fractional damped Kleinâ€“Gordon equationÂwith a generalized scalar potential. Applied Mathematical Modelling, 2022, 108, 512-530.	4.2	7
56	Tanh Jacobi spectral collocation method for the numerical simulation of nonlinear SchrÃ¶dinger equations on unbounded domain. Mathematical Methods in the Applied Sciences, 2023, 46, 656-674.	2.3	7
57	A research note on the nonstandard finite difference method for solving variable-order fractional optimal control problems. JVC/Journal of Vibration and Control, 2018, 24, 2109-2111.	2.6	6
58	Numerical Simulation for a Multidimensional Fourth-Order Nonlinear Fractional Subdiffusion Model with Time Delay. Mathematics, 2021, 9, 3050.	2.2	6
59	An Efficient Hybrid Numerical Scheme for Nonlinear Multiterm Caputo Time and Riesz Space Fractional-Order Diffusion Equations with Delay. Journal of Function Spaces, 2021, 2021, 1-13.	0.9	6
60	Convergence analysis of a Legendre spectral collocation method for nonlinear Fredholm integral equations in multidimensions. Mathematical Methods in the Applied Sciences, 0, , .	2.3	5
61	Computational aspects of fractional Romanovskiâ€“Bessel functions. Computational and Applied Mathematics, 2021, 40, 1.	2.2	5
62	Jacobi Spectral Collocation Technique for Time-Fractional Inverse Heat Equations. Fractal and Fractional, 2021, 5, 115.	3.3	5
63	An easy to implement linearized numerical scheme for fractional reactionâ€“diffusion equations with a prehistorical nonlinear source function. Mathematics and Computers in Simulation, 2022, 200, 218-239.	4.4	5
64	On a discrete fractional stochastic GrÃ¶nwall inequality and its application in the numerical analysis of stochastic FDEs involving a martingale. International Journal of Nonlinear Sciences and Numerical Simulation, 2021, .	1.0	4
65	Interpolating Stabilized Element Free Galerkin Method for Neutral Delay Fractional Damped Diffusion-Wave Equation. Journal of Function Spaces, 2021, 2021, 1-11.	0.9	4
66	Computational and theoretical aspects of Romanovski-Bessel polynomials and their applications in spectral approximations. Numerical Algorithms, 0, , 1.	1.9	3
67	A Pseudo-Spectral Scheme for Systems of Two-Point Boundary Value Problems with Left and Right Sided Fractional Derivatives and Related Integral Equations. CMES - Computer Modeling in Engineering and Sciences, 2021, 128, 21-41.	1.1	2
68	Crank-Nicolson/finite element approximation for the SchrÃ¶dinger equation in the de Sitter spacetime. Physica Scripta, 2021, 96, 124010.	2.5	2
69	On the dissipativity of some Caputo time-fractional subdiffusion models in multiple dimensions: Theoretical and numerical investigations. Journal of Computational and Applied Mathematics, 2022, 400, 113748.	2.0	2
70	Pseudospectral methods for the Riesz space-fractional SchrÃ¶dinger equation. , 2022, , 323-353.		1
71	On the Coleâ€“Hopf transformation and integration by parts formulae in computational methods within fractional differential equations and fractional optimal control theory. JVC/Journal of Vibration and Control, 0, , 107754632110310.	2.6	0