Mahmoud A Zaky

List of Publications by Year
in descending order

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	High‐order finite difference/spectral‐Galerkin approximations for the nonlinear time–space fractional Ginzburg–Landau equation. Numerical Methods for Partial Differential Equations, 2023, 39, 4549-4574.	3.6	12
2	Tanh Jacobi spectral collocation method for the numerical simulation of nonlinear Schrödinger equations on unbounded domain. Mathematical Methods in the Applied Sciences, 2023, 46, 656-674.	2.3	7
3	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
4	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
5	Discrete fractional stochastic Grönwall 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
6	Pseudospectral methods for the Riesz space-fractional Schrödinger equation. , 2022, , 323-353.		1
7	A priori estimates to solutions of the time-fractional convection–diffusion–reaction equation coupled with the Darcy system. Communications in Nonlinear Science and Numerical Simulation, 2022, 109, 106288.	3.3	8
8	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
9	An energy-preserving computational approach for the semilinear space fractional damped Klein–Gordon equation with a generalized scalar potential. Applied Mathematical Modelling, 2022, 108, 512-530.	4.2	7
10	An easy to implement linearized numerical scheme for fractional reaction–diffusion equations with a prehistorical nonlinear source function. Mathematics and Computers in Simulation, 2022, 200, 218-239.	4.4	5
11	Logarithmic Jacobi collocation method for Caputo–Hadamard fractional differential equations. Applied Numerical Mathematics, 2022, 181, 326-346.	2.1	13
12	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
13	An efficient dissipation–preserving Legendre–Galerkin spectral method for the Higgs boson equation in the de Sitter spacetime universe. Applied Numerical Mathematics, 2021, 160, 281-295.	2.1	23
14	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
15	Convergence analysis of an L1-continuous Galerkin method for nonlinear time-space fractional Schrödinger equations. International Journal of Computer Mathematics, 2021, 98, 1420-1437.	1.8	24
16	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
17	Combined Galerkin spectral/finite difference method over graded meshes for the generalized nonlinear fractional Schrödinger equation. Nonlinear Dynamics, 2021, 103, 2493-2507.	5.2	22
18	Computational aspects of fractional Romanovski–Bessel functions. Computational and Applied Mathematics, 2021, 40, 1.	2.2	5

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19	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
20	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
21	Crank-Nicolson/finite element approximation for the Schrödinger equation in the de Sitter spacetime. Physica Scripta, 2021, 96, 124010.	2.5	2
22	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
23	Jacobi Spectral Collocation Technique for Time-Fractional Inverse Heat Equations. Fractal and Fractional, 2021, 5, 115.	3.3	5
24	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
25	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
26	A novel spectral Galerkin/Petrov–Galerkin algorithm for the multi-dimensional space–time fractional advection–diffusion–reaction equations with nonsmooth solutions. Mathematics and Computers in Simulation, 2021, 190, 678-690.	4.4	27
27	On the rate of convergence of the Legendre spectral collocation method for multi-dimensional nonlinear Volterra–Fredholm integral equations. Communications in Theoretical Physics, 2021, 73, 025002.	2.5	12
28	Alikhanov Legendre–Galerkin Spectral Method for the Coupled Nonlinear Time-Space Fractional Ginzburg–Landau Complex System. Mathematics, 2021, 9, 183.	2.2	18
29	On a discrete fractional stochastic Grönwall 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
30	Numerical Simulation for a Multidimensional Fourth-Order Nonlinear Fractional Subdiffusion Model with Time Delay. Mathematics, 2021, 9, 3050.	2.2	6
31	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
32	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
33	High-order continuous Galerkin methods for multi-dimensional advection–reaction–diffusion problems. Engineering With Computers, 2020, 36, 1813-1829.	6.1	23
34	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
35	Multi-dimensional spectral tau methods for distributed-order fractional diffusion equations. Computers and Mathematics With Applications, 2020, 79, 476-488.	2.7	45
36	Semi-implicit Galerkin–Legendre Spectral Schemes for Nonlinear Time-Space Fractional Diffusion–Reaction Equations with Smooth and Nonsmooth Solutions. Journal of Scientific Computing, 2020, 82, 1.	2.3	71

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37	On Romanovskiâ€"Jacobi polynomials and their related approximation results. Numerical Methods for Partial Differential Equations, 2020, 36, 1982-2017.	3.6	11
38	Chebyshev spectral methods for multi-order fractional neutral pantograph equations. Nonlinear Dynamics, 2020, 100, 3785-3797.	5.2	46
39	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
40	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
41	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
42	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
43	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
44	Existence, uniqueness and numerical analysis of solutions of tempered fractional boundary value problems. Applied Numerical Mathematics, 2019, 145, 429-457.	2.1	69
45	Shifted fractional Jacobi spectral algorithm for solving distributed order time-fractional reactionâ€"diffusion equations. Computational and Applied Mathematics, 2019, 38, 1.	2.2	20
46	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
47	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
48	A Legendre collocation method for distributed-order fractional optimal control problems. Nonlinear Dynamics, 2018, 91, 2667-2681.	5.2	91
49	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
50	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
51	A spectral framework for fractional variational problems based on fractional Jacobi functions. Applied Numerical Mathematics, 2018, 132, 51-72.	2.1	52
52	Operational matrix approach for solving the variable-order nonlinear Galilei invariant advectionâ€"diffusion equation. Advances in Difference Equations, 2018, 2018, .	3.5	22
53	A Spectral Numerical Method for Solving Distributed-Order Fractional Initial Value Problems. Journal of Computational and Nonlinear Dynamics, 2018, 13, .	1.2	19
54	NEW RECURSIVE APPROXIMATIONS FOR VARIABLE-ORDER FRACTIONAL OPERATORS WITH APPLICATIONS. Mathematical Modelling and Analysis, 2018, 23, 227-239.	1.5	23

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55	Numerical Solution of the Two-Sided Space–Time Fractional Telegraph Equation Via Chebyshev Tau Approximation. Journal of Optimization Theory and Applications, 2017, 174, 321-341.	1.5	46
56	Numerical simulation of multi-dimensional distributed-order generalized Schrödinger equations. Nonlinear Dynamics, 2017, 89, 1415-1432.	5.2	47
57	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
58	Highly accurate numerical schemes for multi-dimensional space variable-order fractional Schrödinger equations. Computers and Mathematics With Applications, 2017, 73, 1100-1117.	2.7	99
59	An improved collocation method for multi-dimensional space–time variable-order fractional Schrödinger equations. Applied Numerical Mathematics, 2017, 111, 197-218.	2.1	140
60	A fractional–order Jacobi Tau method for a class of time–fractional PDEs with variable coefficients. Mathematical Methods in the Applied Sciences, 2016, 39, 1765-1779.	2.3	53
61	An Efficient Operational Matrix Technique for Multidimensional Variable-Order Time Fractional Diffusion Equations. Journal of Computational and Nonlinear Dynamics, 2016, 11, .	1.2	32
62	Numerical algorithm for the variable-order Caputo fractional functional differential equation. Nonlinear Dynamics, 2016, 85, 1815-1823.	5.2	91
63	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
64	Efficient Legendre spectral tau algorithm for solving the two-sided space–time Caputo fractional advection–dispersion equation. JVC/Journal of Vibration and Control, 2016, 22, 2053-2068.	2.6	41
65	Shifted fractional-order Jacobi orthogonal functions: Application to a system of fractional differential equations. Applied Mathematical Modelling, 2016, 40, 832-845.	4.2	90
66	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
67	Numerical simulation for two-dimensional variable-order fractional nonlinear cable equation. Nonlinear Dynamics, 2015, 80, 101-116.	5.2	190
68	A method based on the Jacobi tau approximation for solving multi-term time–space fractional partial differential equations. Journal of Computational Physics, 2015, 281, 876-895.	3.8	256
69	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
70	On the Cole–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
71	Computational and theoretical aspects of Romanovski-Bessel polynomials and their applications in spectral approximations. Numerical Algorithms, 0, , 1.	1.9	3