Yong Zhang

List of Publications by Year
in descending order

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116 papers	4,614 citations	117625 34 h-index	110387 64 g-index
117 all docs	117 docs citations	117 times ranked	2816 citing authors

#	Article	IF	Citations
1	A new collection of real world applications of fractional calculus in science and engineering. Communications in Nonlinear Science and Numerical Simulation, 2018, 64, 213-231.	3.3	1,042
2	Time and space nonlocalities underlying fractional-derivative models: Distinction and literature review of field applications. Advances in Water Resources, 2009, 32, 561-581.	3.8	277
3	Tempered anomalous diffusion in heterogeneous systems. Geophysical Research Letters, 2008, 35, .	4.0	228
4	A Review on Variable-Order Fractional Differential Equations: Mathematical Foundations, Physical Models, Numerical Methods and Applications. Fractional Calculus and Applied Analysis, 2019, 22, 27-59.	2.2	218
5	Use of a variable-index fractional-derivative model to capture transient dispersion in heterogeneous media. Journal of Contaminant Hydrology, 2014, 157, 47-58.	3.3	126
6	A fractal Richardsâ€™ equation to capture the non-Boltzmann scaling of water transport in unsaturated media. Advances in Water Resources, 2013, 52, 292-295.	3.8	121
7	A review of applications of fractional calculus in Earth system dynamics. Chaos, Solitons and Fractals, 2017, 102, 29-46.	5.1	114
8	Space-fractional advection-dispersion equations with variable parameters: Diverse formulas, numerical solutions, and application to the Macrodispersion Experiment site data. Water Resources Research, 2007, 43, .	4.2	113
9	Particle tracking for time-fractional diffusion. Physical Review E, 2008, 78, 036705.	2.1	77
10	Reed biochar supported hydroxyapatite nanocomposite: Characterization and reactivity for methylene blue removal from aqueous media. Journal of Molecular Liquids, 2018, 263, 53-63.	4.9	75
11	Predicting the Tails of Breakthrough Curves in Regional-Scale Alluvial Systems. Ground Water, 2007, 45, 473-484.	1.3	74
12	Linking fluvial bed sediment transport across scales. Geophysical Research Letters, 2012, 39, .	4.0	64
13	Lagrangian simulation of multidimensional anomalous transport at the MADE site. Geophysical Research Letters, 2008, 35, .	4.0	63
14	Linking aquifer spatial properties and non-Fickian transport in mobileâ€“immobile like alluvial settings. Journal of Hydrology, 2014, 512, 315-331.	5.4	63
15	Random walk approximation of fractional-order multiscaling anomalous diffusion. Physical Review E, 2006, 74, 026706.	2.1	58
16	Debatesâ€”Stochastic subsurface hydrology from theory to practice: A geologic perspective. Water Resources Research, 2016, 52, 9235-9245.	4.2	58
17	Insights into the adsorption mechanism of tannic acid by a green synthesized nano-hydroxyapatite and its effect on aqueous Cu(II) removal. Science of the Total Environment, 2021, 778, 146189.	8.0	56
18	Modeling mixed retention and early arrivals in multidimensional heterogeneous media using an explicit <scp>L</scp>agrangian scheme. Water Resources Research, 2015, 51, 6311-6337.	4.2	55

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19	The impact of medium architecture of alluvial settings on non-Fickian transport. Advances in Water Resources, 2013, 54, 78-99.	3.8	54
20	Relaxation and diffusion models with non-singular kernels. Physica A: Statistical Mechanics and Its Applications, 2017, 468, 590-596.	2.6	53
21	Groundwater level modeling framework by combining the wavelet transform with a long short-term memory data-driven model. Science of the Total Environment, 2021, 783, 146948.	8.0	53
22	A space fractional constitutive equation model for non-Newtonian fluid flow. Communications in Nonlinear Science and Numerical Simulation, 2018, 62, 409-417.	3.3	51
23	Macromolecular humic acid modified nano-hydroxyapatite for simultaneous removal of Cu(II) and methylene blue from aqueous solution: Experimental design and adsorption study. International Journal of Biological Macromolecules, 2020, 150, 849-860.	7.5	51
24	Backward fractional advection dispersion model for contaminant source prediction. Water Resources Research, 2016, 52, 2462-2473.	4.2	50
25	Fractional and fractal derivative models for transient anomalous diffusion: Model comparison. Chaos, Solitons and Fractals, 2017, 102, 346-353.	5.1	49
26	Applicability of time fractional derivative models for simulating the dynamics and mitigation scenarios of COVID-19. Chaos, Solitons and Fractals, 2020, 138, 109959.	5.1	46
27	Enhanced Cr(VI) removal from water using a green synthesized nanocrystalline chlorapatite: Physicochemical interpretations and fixed-bed column mathematical model study. Chemosphere, 2021, 264, 128421.	8.2	45
28	A time fractional convectionâ€“diffusion equation to model gas transport through heterogeneous soil and gas reservoirs. Physica A: Statistical Mechanics and Its Applications, 2018, 502, 356-369.	2.6	43
29	Spatial fractional Darcyâ€™s law to quantify fluid flow in natural reservoirs. Physica A: Statistical Mechanics and Its Applications, 2019, 519, 119-126.	2.6	43
30	Understanding partial bed-load transport: Experiments and stochastic model analysis. Journal of Hydrology, 2015, 521, 196-204.	5.4	42
31	Effects of macromolecular humic/fulvic acid on Cd(II) adsorption onto reed-derived biochar as compared with tannic acid. International Journal of Biological Macromolecules, 2019, 134, 43-55.	7.5	42
32	Particle tracking for fractional diffusion with two time scales. Computers and Mathematics With Applications, 2010, 59, 1078-1086.	2.7	38
33	Humic acid modified nano-ferrous sulfide enhances the removal efficiency of Cr(VI). Separation and Purification Technology, 2020, 240, 116623.	7.9	37
34	Accuracy of travel time distribution (TTD) models as affected by TTD complexity, observation errors, and model and tracer selection. Water Resources Research, 2014, 50, 6191-6213.	4.2	34
35	Enhanced removal of humic acid from aqueous solution by novel stabilized nano-amorphous calcium phosphate: Behaviors and mechanisms. Applied Surface Science, 2018, 427, 965-975.	6.1	34
36	Simulating PFAS adsorption kinetics, adsorption isotherms, and nonideal transport in saturated soil with tempered one-sided stable density (TOSD) based models. Journal of Hazardous Materials, 2021, 411, 125169.	12.4	30

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37	Relationship between flux and resident concentrations for anomalous dispersion. Geophysical Research Letters, 2006, 33, n/a-n/a.	4.0	28
38	Moments for Tempered Fractional Advection-Diffusion Equations. Journal of Statistical Physics, 2010, 139, 915-939.	1.2	28
39	Transport of arsenic loaded by ferric humate colloid in saturated porous media. Chemosphere, 2020, 240, 124987.	8.2	28
40	Moment analysis for spatiotemporal fractional dispersion. Water Resources Research, 2008, 44, .	4.2	27
41	A subordinated advection model for uniform bed load transport from local to regional scales. Journal of Geophysical Research F: Earth Surface, 2014, 119, 2711-2729.	2.8	27
42	A fast semi-discrete Kansa method to solve the two-dimensional spatiotemporal fractional diffusion equation. Journal of Computational Physics, 2017, 345, 74-90.	3.8	26
43	Comparison of Time Nonlocal Transport Models for Characterizing Non-Fickian Transport: From Mathematical Interpretation to Laboratory Application. Water (Switzerland), 2018, 10, 778.	2.7	26
44	Gaussian setting time for solute transport in fluvial systems. Water Resources Research, 2011, 47, .	4.2	25
45	Time fractional derivative model with Mittag-Leffler function kernel for describing anomalous diffusion: Analytical solution in bounded-domain and model comparison. Chaos, Solitons and Fractals, 2018, 115, 306-312.	5.1	25
46	Improved understanding of bimolecular reactions in deceptively simple homogeneous media: From laboratory experiments to Lagrangian quantification. Water Resources Research, 2014, 50, 1704-1715.	4.2	24
47	A scale-dependent finite difference approximation for time fractional differential equation. Computational Mechanics, 2019, 63, 429-442.	4.0	23
48	A distributed-order time fractional derivative model for simulating bimodal sub-diffusion in heterogeneous media. Journal of Hydrology, 2020, 591, 125504.	5.4	23
49	Bounded fractional diffusion in geological media: Definition and <scp>L</scp>agrangian approximation. Water Resources Research, 2016, 52, 8561-8577.	4.2	22
50	Particle-tracking simulation of fractional diffusion-reaction processes. Physical Review E, 2011, 84, 066704.	2.1	21
51	Super-diffusion affected by hydrofacies mean length and source geometry in alluvial settings. Journal of Hydrology, 2020, 582, 124515.	5.4	21
52	Comparing the effects of humic acid and oxalic acid on Pb(II) immobilization by a green synthesized nanocrystalline hydroxyapatite. Chemosphere, 2021, 285, 131411.	8.2	21
53	Can a Time Fractionalâ€Derivative Model Capture Scaleâ€Dependent Dispersion in Saturated Soils?. Ground Water, 2017, 55, 857-870.	1.3	20
54	Nonlocal transport models for capturing solute transport in oneâ€dimensional sand columns: Model review, applicability, limitations and improvement. Hydrological Processes, 2020, 34, 5104-5122.	2.6	20

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55	Adaptive Multirate Mass Transfer (aMMT) Model: A New Approach to Upscale Regionalâ€Scale Transport Under Transient Flow Conditions. Water Resources Research, 2020, 56, e2019WR026000.	4.2	20
56	Contaminant transport in heterogeneous aquifers: A critical review of mechanisms and numerical methods of non-Fickian dispersion. Science China Earth Sciences, 2021, 64, 1224-1241.	5.2	19
57	Design of hydroxyapatite aerogel with excellent adsorption performance to uranium. Journal of Environmental Chemical Engineering, 2021, 9, 106364.	6.7	19
58	Impact of absorbing and reflective boundaries on fractional derivative models: Quantification, evaluation and application. Advances in Water Resources, 2019, 128, 129-144.	3.8	17
59	A tempered multiscaling stable model to simulate transport in regionalâ€scale fractured media. Geophysical Research Letters, 2010, 37, .	4.0	15
60	Evaluation and linking of effective parameters in particleâ€based models and continuum models for mixingâ€limited bimolecular reactions. Water Resources Research, 2013, 49, 4845-4865.	4.2	15
61	Incorporating Superâ€Diffusion due to Subâ€Grid Heterogeneity to Capture Nonâ€Fickian Transport. Ground Water, 2015, 53, 699-708.	1.3	15
62	Application of Tempered-Stable Time Fractional-Derivative Model to Upscale Subdiffusion for Pollutant Transport in Field-Scale Discrete Fracture Networks. Mathematics, 2018, 6, 5.	2.2	15
63	Assessment of Groundwater Susceptibility to Non-Point Source Contaminants Using Three-Dimensional Transient Indexes. International Journal of Environmental Research and Public Health, 2018, 15, 1177.	2.6	14
64	Highly efficient uranium capture from wastewater by hydroxyapatite aerogels prepared with konjac gum as template. Journal of Water Process Engineering, 2022, 48, 102919.	5.6	14
65	A convenient method to estimate soil hydraulic conductivity using electrical conductivity and soil compaction degree. Journal of Hydrology, 2019, 575, 211-220.	5.4	13
66	Estimation of the Interaction Between Groundwater and Surface Water Based on Flow Routing Using an Improved Nonlinear Muskingum-Cunge Method. Water Resources Management, 2021, 35, 2649-2666.	3.9	13
67	Identify source location and release time for pollutants undergoing super-diffusion and decay: Parameter analysis and model evaluation. Advances in Water Resources, 2017, 107, 517-524.	3.8	12
68	Quantifying colloid fate and transport through dense vegetation and soil systems using a particle-plugging tempered fractional-derivative model. Journal of Contaminant Hydrology, 2019, 224, 103484.	3.3	12
69	Monte Carlo simulation of superdiffusion and subdiffusion in macroscopically heterogeneous media. Water Resources Research, 2009, 45, .	4.2	11
70	A fully subordinated linear flow model for hillslope subsurface stormflow. Water Resources Research, 2017, 53, 3491-3504.	4.2	11
71	Identification of Pollutant Source for Superâ€Diffusion in Aquifers and Rivers with Bounded Domains. Water Resources Research, 2018, 54, 7092-7108.	4.2	11
72	Analyzing and modeling sub-diffusive transport of bedload along a heterogeneous gravel bed using stochastic and statistical methods. Journal of Hydrology, 2021, 596, 125697.	5.4	11

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73	A fractional-order tempered-stable continuity model to capture surface water runoff. JVC/Journal of Vibration and Control, 2016, 22, 1993-2003.	2.6	10
74	Adsorption behavior and mechanism of Cu(II) onto carbonate-substituted hydroxyapatite in the presence of humic acid. Journal of Dispersion Science and Technology, 2017, 38, 1021-1029.	2.4	10
75	Statistical Analysis of Extreme Events in Precipitation, Stream Discharge, and Groundwater Head Fluctuation: Distribution, Memory, and Correlation. Water (Switzerland), 2019, 11, 707.	2.7	10
76	Explorations on efficient extraction of uranium with porous coal fly ash aerogels. Science of the Total Environment, 2022, 839, 156365.	8.0	10
77	Peclet number as affected by molecular diffusion controls transient anomalous transport in alluvial aquiferâ€“aquitard complexes. Journal of Contaminant Hydrology, 2015, 177-178, 220-238.	3.3	9
78	Quantifying fate and transport of nitrate in saturated soil systems using fractional derivative model. Applied Mathematical Modelling, 2020, 81, 279-295.	4.2	9
79	Identification and Scaling Behavior Assessment of the Dominant Hydrological Factors of Nitrate Concentrations in Streamflow. Journal of Hydrologic Engineering - ASCE, 2020, 25, .	1.9	9
80	Generalized finite difference method for a class of multidimensional space-fractional diffusion equations. Computational Mechanics, 2021, 67, 17-32.	4.0	9
81	A Dual Heterogeneous Domain Model for Upscaling Anomalous Transport With Multiâ€Peaks in Heterogeneous Aquifers. Water Resources Research, 2022, 58, .	4.2	9
82	Evaluating Differences in Transport Behavior of Sodium Chloride and Brilliant Blue FCF in Sand Columns. Transport in Porous Media, 2015, 109, 765-779.	2.6	8
83	Numerical Simulation and Experimental Study of Bimolecular Reactive Transport in Porous Media. Transport in Porous Media, 2015, 109, 727-746.	2.6	8
84	Influence of bed clusters and size gradation on operational time distribution for nonâ€uniform bedâ€load transport. Hydrological Processes, 2016, 30, 3030-3045.	2.6	8
85	Continuous time random walk model for non-uniform bed-load transport with heavy-tailed hop distances and waiting times. Journal of Hydrology, 2019, 578, 124057.	5.4	8
86	Lagrangian solver for vector fractional diffusion in bounded anisotropic aquifers: Development and application. Fractional Calculus and Applied Analysis, 2019, 22, 1607-1640.	2.2	8
87	Event-Driven Hyporheic Exchange during Single and Seasonal Rainfall in a Gaining Stream. Water Resources Management, 2020, 34, 4617-4631.	3.9	8
88	Investigation on multi-scale pore seepage model of shale gas reservoir considering diffusion and slippage effect. Microfluidics and Nanofluidics, 2020, 24, 1.	2.2	8
89	Simulating multi-dimensional anomalous diffusion in nonstationary media using variable-order vector fractional-derivative models with Kansa solver. Advances in Water Resources, 2019, 133, 103423.	3.8	7
90	Revisit of advection-dispersion equation model with velocity-dependent dispersion in capturing tracer dynamics in single empty fractures. Journal of Hydrodynamics, 2018, 30, 1055-1063.	3.2	6

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91	Quantifying Transport of Arsenic in Both Natural Soils and Relatively Homogeneous Porous Media using Stochastic Models. Soil Science Society of America Journal, 2018, 82, 1057-1070.	2.2	6
92	Application of fractional differential equation to interpret the dynamics of dissolved heavy-metal uptake in streams at a wide range of scales. European Physical Journal Plus, 2019, 134, 1.	2.6	6
93	A fractal derivative model to quantify bed-load transport along a heterogeneous sand bed. Environmental Fluid Mechanics, 2020, 20, 1603-1616.	1.6	6
94	Timeâ€Fractional Flow Equations (tâ€FFEs) to Upscale Transient Groundwater Flow Characterized by Temporally Nonâ€Darcian Flow Due to Medium Heterogeneity. Water Resources Research, 2021, 57, e2020WR029554.	4.2	6
95	Diffusion in Relatively Homogeneous Sand Columns: A Scale-Dependent or Scale-Independent Process?. Entropy, 2013, 15, 4376-4391.	2.2	5
96	Lagrangian simulation of multi-step and rate-limited chemical reactions in multi-dimensional porous media. Water Science and Engineering, 2018, 11, 101-113.	3.2	5
97	Temporal Scaling Analytical Method to Identify Multiâ€Fractionality in Groundwater Head Fluctuations. Ground Water, 2019, 57, 485-491.	1.3	5
98	Co-transport of biogenic nano-hydroxyapatite and Pb(II) in saturated sand columns: Controlling factors and stochastic modeling. Chemosphere, 2021, 275, 130078.	8.2	5
99	Enhanced-solubilization and dissolution of multicomponent DNAPL from homogeneous porous media. Journal of Contaminant Hydrology, 2022, 247, 103967.	3.3	5
100	An investigation on the fractional derivative model in characterizing sodium chloride transport in a single fractureâ‹†. European Physical Journal Plus, 2019, 134, 1.	2.6	4
101	Fractional-derivative models for non-Fickian transport in a single fracture and its extension. Journal of Hydrology, 2020, 590, 125396.	5.4	4
102	Fractional dynamics of tracer transport in fractured media from local to regional scales. Open Physics, 2013, 11, .	1.7	3
103	Hausdorff Fractal Derivative Model to Characterize Transport of Inorganic Arsenic in Porous Media. Water (Switzerland), 2020, 12, 2353.	2.7	3
104	Hierarchical Fractional Advection-Dispersion Equation (FADE) to Quantify Anomalous Transport in River Corridor over a Broad Spectrum of Scales: Theory and Applications. Mathematics, 2021, 9, 790.	2.2	3
105	Modeling COVID-19 spreading dynamics and unemployment rate evolution in rural and urban counties of Alabama and New York using fractional derivative models. Results in Physics, 2021, 26, 104360.	4.1	3
106	Upscaling Heat Flow in Porous Media With Periodic Surface Temperature Fluctuation Using a Oneâ€Dimensional Subordinated Heat Transfer Equation. Water Resources Research, 2021, 57, e2020WR027266.	4.2	3
107	Fractional-derivative model simulations of reach-scale uptake and transport dynamics of natural fluorescent dissolved organic matter in a temperate forested stream in southeastern U.S.. Journal of Hydrology, 2021, 603, 126878.	5.4	3
108	Methyl silicate promotes the oxidative degradation of bisphenol A by permanganate: Efficiency enhancement mechanism and solid-liquid separation characteristics. Chemosphere, 2022, 293, 133634.	8.2	3

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109	Backward Location and Travel Time Probabilities for Pollutants Moving in Three-Dimensional Aquifers: Governing Equations and Scale Effect. Water (Switzerland), 2022, 14, 624.	2.7	3
110	Impact of fractional probability distributions on statistics of hydraulic conductivity, dynamics of groundwater flow and solute transport at a lowâ€permeability site. Hydrological Processes, 2020, 34, 4112-4127.	2.6	2
111	Removal kinetics and mechanisms of tetrabromobisphenol A (TBBPA) by HA-n-FeS colloids in the absence and presence of oxygen. Journal of Environmental Management, 2022, 311, 114885.	7.8	2
112	Migration modelling of As(V) loaded by humic acid and nano iron oxide composite colloids affected by various environmental factors. Environmental Advances, 2022, 8, 100218.	4.8	2
113	A distributed domain model coupling open channel flow and groundwater flow to quantify the impact of lateral hydrologic exchange on hydrograph. Journal of Hydrology, 2022, 611, 128010.	5.4	2
114	Precipitation storm property distributions with heavy tails follow tempered stable density relationships. Journal of Physics: Conference Series, 2018, 1053, 012119.	0.4	1
115	A fractional-order dependent collocation method with graded mesh for impulsive fractional-order system. Computational Mechanics, 0, , 1.	4.0	1
116	An Investigation of Stretched Exponential Function in Quantifying Long-Term Memory of Extreme Events Based on Artificial Data following LÃ©vy Stable Distribution. Complexity, 2018, 2018, 1-7.	1.6	0