Joseph Klafter

List of Publications by Year
in descending order

136 papers	20,696 citations	36303 51 h-index	15266 126 g-index
138 all docs	138 docs citations	138 times ranked	9681 citing authors

#	Article	IF	Citations
1	The random walk's guide to anomalous diffusion: a fractional dynamics approach. Physics Reports, 2000, 339, 1-77.	25.6	7,039
2	The restaurant at the end of the random walk: recent developments in the description of anomalous transport by fractional dynamics. Journal of Physics A, 2004, 37, R161-R208.	1.6	1,869
3	Strange kinetics. Nature, 1993, 363, 31-37.	27.8	1,024
4	Anomalous Diffusion and Relaxation Close to Thermal Equilibrium: A Fractional Fokker-Planck Equation Approach. Physical Review Letters, 1999, 82, 3563-3567.	7.8	678
5	Beyond Brownian Motion. Physics Today, 1996, 49, 33-39.	0.3	643
6	The nonlinear nature of friction. Nature, 2004, 430, 525-528.	27.8	610
7	Fractional Kinetics. Physics Today, 2002, 55, 48-54.	0.3	574
8	Boundary value problems for fractional diffusion equations. Physica A: Statistical Mechanics and Its Applications, 2000, 278, 107-125.	2.6	442
9	Anomalous diffusion spreads its wings. Physics World, 2005, 18, 29-32.	0.0	357
10	Random walks with infinite spatial and temporal moments. Journal of Statistical Physics, 1982, 27, 499-512.	1.2	308
11	Spectroscopic Evidence for Excitonic Localization in Fractal Antenna Supermolecules. Physical Review Letters, 1997, 78, 1239-1242.	7.8	295
12	Fractional Brownian Motion Versus the Continuous-Time Random Walk: A Simple Test for Subdiffusive Dynamics. Physical Review Letters, 2009, 103, 180602.	7.8	286
13	Nonergodicity Mimics Inhomogeneity in Single Particle Tracking. Physical Review Letters, 2008, 100, 250602.	7.8	281
14	Stretched exponential decay and correlations in the catalytic activity of fluctuating single lipase molecules. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 2368-2372.	7.1	273
15	Physical pictures of transport in heterogeneous media: Advection-dispersion, random-walk, and fractional derivative formulations. Water Resources Research, 2002, 38, 9-1-9-12.	4.2	264
16	Dendrimers as Controlled Artificial Energy Antennae. Journal of the American Chemical Society, 1997, 119, 6197-6198.	13.7	260
17	Role of substrate unbinding in Michaelis–Menten enzymatic reactions. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 4391-4396.	7.1	205
18	Anomalous transport in external fields: Continuous time random walks and fractional diffusion equations extended. Physical Review E, 1998, 58, 1621-1633.	2.1	196

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19	Torque and Twist against Superlubricity. Physical Review Letters, 2008, 100, 046102.	7.8	190
20	Dynamics of ionic solvation. Journal of Chemical Physics, 1988, 88, 3246-3252.	3.0	186
21	Single-Enzyme Kinetics of CALB-Catalyzed Hydrolysis. Angewandte Chemie - International Edition, 2005, 44, 560-564.	13.8	177
22	The dynamical foundation of fractal stream chemistry: The origin of extremely long retention times. Geophysical Research Letters, 2002, 29, 5-1-5-4.	4.0	170
23	Subdiffusive transport close to thermal equilibrium: From the Langevin equation to fractional diffusion. Physical Review E, 2000, 61, 6308-6311.	2.1	156
24	Solvation dynamics in polar liquids. Journal of Chemical Physics, 1988, 89, 4288-4299.	3.0	142
25	First passage and arrival time densities for LÃ©vy flights and the failure of the method of images. Journal of Physics A, 2003, 36, L537-L544.	1.6	134
26	From stretched exponential to inverse power-law: fractional dynamics, Coleâ€"Cole relaxation processes, and beyond. Journal of Non-Crystalline Solids, 2002, 305, 81-87.	3.1	130
27	LÃ©vy Flights in a Steep Potential Well. Journal of Statistical Physics, 2004, 115, 1505-1535.	1.2	125
28	Bifurcation, bimodality, and finite variance in confined LÃ©vy flights. Physical Review E, 2003, 67, 010102.	2.1	123
29	Geometric versus Energetic Competition in Light Harvesting by Dendrimers. Journal of Physical Chemistry B, 1998, 102, 1662-1664.	2.6	122
30	Atomic Scale Engines: Cars and Wheels. Physical Review Letters, 2000, 84, 6058-6061.	7.8	120
31	Leapover Lengths and First Passage Time Statistics for LÃ©vy Flights. Physical Review Letters, 2007, 99, 160602.	7.8	113
32	LÃ©vy Walks Versus LÃ©vy Flights. , 1986, , 279-283.		112
33	When Translocation Dynamics Becomes Anomalous. Biophysical Journal, 2003, 85, 2776-2779.	0.5	112
34	On mean residence and first passage times in finite one-dimensional systems. Journal of Chemical Physics, 1998, 109, 5187-5193.	3.0	111
35	From a Generalized Chapmanâˆ’Kolmogorov Equation to the Fractional Kleinâˆ’Kramers Equationâ€. Journal of Physical Chemistry B, 2000, 104, 3851-3857.	2.6	107
36	Equivalence of the Fractional Fokker-Planck and Subordinated Langevin Equations: The Case of a Time-Dependent Force. Physical Review Letters, 2008, 101, 210601.	7.8	107

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37	Effects of structural disorder on the optical properties of molecular crystals. Journal of Chemical Physics, 1978, 68, 1513-1522.	3.0	97
38	Subdiffusion of mixed origins: When ergodicity and nonergodicity coexist. Physical Review E, 2010, 81, 010101.	2.1	96
39	Fractons in Proteins: Can They Lead to Anomalously Decaying Time Autocorrelations?. Physical Review Letters, 2005, 95, 098106.	7.8	83
40	What Can One Learn from Two-State Single-Molecule Trajectories?. Biophysical Journal, 2005, 88, 3780-3783.	0.5	78
41	Anomalous transport in disordered systems under the influence of external fields. Physica A: Statistical Mechanics and Its Applications, 1999, 266, 343-350.	2.6	74
42	LÃ©vy-Driven Langevin Systems: Targeted Stochasticity. Journal of Statistical Physics, 2003, 111, 739-768.	1.2	73
43	Barrier crossing driven by LÃ©vy noise: Universality and the role of noise intensity. Physical Review E, 2007, 75, 041101.	2.1	72
44	Proteins: Coexistence of Stability and Flexibility. Physical Review Letters, 2008, 100, 208101.	7.8	71
45	A Role for the Juxtamembrane Cytoplasm in the Molecular Dynamics of Focal Adhesions. PLoS ONE, 2009, 4, e4304.	2.5	69
46	Searching circular DNA strands. Journal of Physics Condensed Matter, 2007, 19, 065140.	1.8	66
47	Dendrimers as light harvesting antennae. Journal of Luminescence, 1998, 76-77, 197-200.	3.1	65
48	Probing static disorder in Arrhenius kinetics by single-molecule force spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 11336-11340.	7.1	65
49	Anomalous is ubiquitous. Annals of Physics, 2011, 326, 2517-2531.	2.8	62
50	Test for Determining a Subdiffusive Model in Ergodic Systems from Single Trajectories. Physical Review Letters, 2013, 110, 090601.	7.8	61
51	Anomalies in the vibrational dynamics of proteins are a consequence of fractal-like structure. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 13696-13700.	7.1	57
52	A unified and universal explanation for LÃ©vy laws and 1/f noises. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 12251-12254.	7.1	54
53	Some fundamental aspects of LÃ©vy flights. Chaos, Solitons and Fractals, 2007, 34, 129-142.	5.1	53
54	Anomalous Size Dependence of Relaxational Processes. Physical Review Letters, 1997, 78, 3338-3341.	7.8	49

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55	Natural cutoff in Lévy flights caused by dissipative nonlinearity. Physical Review E, 2005, 72, 010101.	2.1	45
56	Detecting origins of subdiffusion:P-variation test for confined systems. Physical Review E, 2010, 82, 011129.	2.1	45
57	First passage times of Lévy flights coexisting with subdiffusion. Physical Review E, 2007, 76, 031129.	2.1	43
58	Anomalous Stochastic Processes in the Fractional Dynamics Framework: Fokker-Planck Equation, Dispersive Transport, and Non-Exponential Relaxation. Advances in Chemical Physics, 2007, , 223-264.	0.3	43
59	Lévy, Ornstein–Uhlenbeck, and Subordination: Spectral vs. Jump Description. Journal of Statistical Physics, 2005, 119, 165-196.	1.2	41
60	Fundamentals of Lévy Flight Processes. Advances in Chemical Physics, 2006, , 439-496.	0.3	40
61	Kramers' escape problem with anomalous kinetics: non-exponential decay of the survival probability. Chemical Physics Letters, 2000, 321, 238-242.	2.6	38
62	Random walks in liquids. The Journal of Physical Chemistry, 1989, 93, 7023-7026.	2.9	37
63	A probabilistic walk up power laws. Physics Reports, 2012, 511, 143-175.	25.6	35
64	Paretian Poisson Processes. Journal of Statistical Physics, 2008, 131, 487-504.	1.2	34
65	Electronic energy transfer in impurity bands of mixed organic solids. Journal of Chemical Physics, 1979, 71, 1961-1966.	3.0	31
66	On the first passage of one-sided Lévy motions. Physica A: Statistical Mechanics and Its Applications, 2004, 336, 219-244.	2.6	31
67	On the nonlinear modeling of shot noise. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 13779-13782.	7.1	31
68	Universal Generation of Statistical Self-Similarity: A Randomized Central Limit Theorem. Physical Review Letters, 2009, 103, 040602.	7.8	30
69	The fractional Fokker-Planck equation: dispersive transport in an external force field. Journal of Molecular Liquids, 2000, 86, 219-228.	4.9	29
70	Correlation cascades of Lévy-driven random processes. Physica A: Statistical Mechanics and Its Applications, 2007, 376, 1-26.	2.6	28
71	A growth–collapse model: Lévy inflow, geometric crashes, and generalized Ornstein–Uhlenbeck dynamics. Physica A: Statistical Mechanics and Its Applications, 2004, 334, 1-21.	2.6	27
72	Closed-Form Solutions for Continuous Time Random Walks on Finite Chains. Physical Review Letters, 2005, 95, 098105.	7.8	26

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73	Challenges in determining anomalous diffusion in crowded fluids. Journal of Physics Condensed Matter, 2011, 23, 234113.	1.8	25
74	Unequal Twins: Probability Distributions Do Not Determine Everything. Physical Review Letters, 2011, 107, 260601.	7.8	25
75	Some new aspects of dendrimer applications. Journal of Luminescence, 2005, 111, 315-325.	3.1	24
76	Fluorescence Recovery after Photobleaching: The Case of Anomalous Diffusion. Biophysical Journal, 2008, 94, 4646-4653.	0.5	24
77	Facilitated diffusion in a crowded environment: from kinetics to stochastics. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 434012.	2.1	24
78	Fluorescence Correlation Spectroscopy: The Case of Subdiffusion. Biophysical Journal, 2009, 96, 2055-2063.	0.5	24
79	Accurate Quantification of Diffusion and Binding Kinetics of Non‐integral Membrane Proteins by FRAP. Traffic, 2011, 12, 1648-1657.	2.7	23
80	Spatial gliding, temporal trapping, and anomalous transport. Physica D: Nonlinear Phenomena, 2004, 187, 30-50.	2.8	21
81	Correlations in a generalized elastic model: Fractional Langevin equation approach. Physical Review E, 2010, 82, 061104.	2.1	21
82	Randomized central limit theorems: A unified theory. Physical Review E, 2010, 82, 021122.	2.1	21
83	Manipulating Single Enzymes by an External Harmonic Force. Physical Review Letters, 2007, 98, 168302.	7.8	20
84	Fractal Lévy correlation cascades. Journal of Physics A: Mathematical and Theoretical, 2007, 40, F307-F314.	2.1	20
85	From Ornstein-Uhlenbeck dynamics to long-memory processes and fractional Brownian motion. Physical Review E, 2009, 79, 021115.	2.1	20
86	From solar flare time series to fractional dynamics. Physica A: Statistical Mechanics and Its Applications, 2008, 387, 1077-1087.	2.6	19
87	Dynamic Structure Factor of Vibrating Fractals. Physical Review Letters, 2012, 108, 068101.	7.8	17
88	Spectral random walks and line broadening of impurity molecules in an Ising spin glass environment. Journal of Chemical Physics, 1998, 108, 1851-1858.	3.0	16
89	On the relationships between kinetic schemes and two-state single molecule trajectories. Journal of Chemical Physics, 2005, 123, 064903.	3.0	16
90	Molecular Adsorption on Porous Silica Gels from Binary Solutions. Israel Journal of Chemistry, 1991, 31, 135-145.	2.3	15

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91	Lévy meets Boltzmann: strange initial conditions for Brownian and fractional Fokker–Planck equations. Physica A: Statistical Mechanics and Its Applications, 2001, 302, 290-296.	2.6	15
92	Non-linear Shot Noise: Lévy, Noah, & Joseph. Physica A: Statistical Mechanics and Its Applications, 2006, 360, 227-260.	2.6	15
93	Dynamic structure factor of vibrating fractals: Proteins as a case study. Physical Review E, 2012, 85, 011906.	2.1	15
94	Macroscopic versus microscopic description of friction: from Tomlinson model to shearons. Tribology Letters, 2000, 9, 45-54.	2.6	14
95	Hopping motion of interacting particles: From time-dependent interaction to directed transport. Physical Review E, 2001, 65, 011108.	2.1	14
96	Fractal probability laws. Physical Review E, 2008, 77, 061125.	2.1	14
97	Some features of two-particle exciton-phonon excitations in molecular crystals. Chemical Physics, 1980, 47, 25-48.	1.9	13
98	Energy trapping from localized states in mixed organic solids. Journal of Chemical Physics, 1980, 73, 1004-1004.	3.0	13
99	Escape from a fluctuating system: A master equation and trapping approach. Physical Review E, 1999, 60, 2554-2558.	2.1	13
100	Stochastic Ornstein?Uhlenbeck Capacitors. Journal of Statistical Physics, 2005, 118, 177-198.	1.2	12
101	Natural and Modified Forms of Distributed-Order Fractional Diffusion Equations. , 2011, , 107-127.		12
102	Analyzing friction forces with the Jarzynski equality. Journal of Physics Condensed Matter, 2008, 20, 354008.	1.8	11
103	On the generation of anomalous diffusion. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 472003.	2.1	11
104	Universal statistics and control of random transport processes. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 222001.	2.1	11
105	On the generation of anomalous and ultraslow diffusion. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 405006.	2.1	10
106	Stretched-exponential relaxation: The role of system size. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1998, 77, 1323-1329.	0.6	9
107	Correctly validating results from single molecule data: The case of stretched exponential decay in the catalytic activity of single lipase B molecules. Chemical Physics Letters, 2006, 432, 371-374.	2.6	9
108	Power-law distributions: Beyond Paretian fractality. Risk and Decision Analysis, 2009, 1, 155-170.	0.4	9

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109	Ultra diffusions. Journal of Physics A: Mathematical and Theoretical, 2010, 43, 132002.	2.1	9
110	Universal self-similarity of propagating populations. Physical Review E, 2010, 82, 011112.	2.1	9
111	Twoâ€particle vibrational excitations in molecular crystals. Journal of Chemical Physics, 1982, 77, 2816-2824.	3.0	8
112	Temporal generation of power-law distributions: A universal â€˜oligarchy mechanismâ€™. Physica A: Statistical Mechanics and Its Applications, 2007, 377, 53-57.	2.6	8
113	On the extreme flights of one-sided LÃ©vy processes. Physica A: Statistical Mechanics and Its Applications, 2003, 330, 8-17.	2.6	7
114	Levy Statistics and Anomalous Transport: Levy Flights and Subdiffusion. , 2012, , 1724-1745.		7
115	Nonlinear shot noise, memory systems, and all-time hit parades. Physica A: Statistical Mechanics and Its Applications, 2006, 366, 281-298.	2.6	6
116	Temporal Correlation Functions of Concentration Fluctuations: An Anomalous Case. Journal of Physical Chemistry B, 2008, 112, 12740-12747.	2.6	6
117	On the generation of log-LÃ©vy distributions and extreme randomness. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 415003.	2.1	6
118	Looking at Friction through â€œShearonsâ€. Journal of Physical Chemistry B, 2000, 104, 3791-3794.	2.6	5
119	On the active periods of nonlinear Shot Noise. Physica A: Statistical Mechanics and Its Applications, 2006, 363, 237-259.	2.6	5
120	Effects of structural disorder on twoâ€particle excitonâ€"phonon excitations in organic materials. Journal of Chemical Physics, 1982, 77, 2812-2815.	3.0	3
121	Motors on the molecular scale. Journal of Luminescence, 2001, 94-95, 137-142.	3.1	3
122	Markov-breaking and the emergence of long memory in Ornsteinâ€"Uhlenbeck systems. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 122001.	2.1	3
123	Bundeet al.Reply:. Physical Review Letters, 1998, 80, 5454-5454.	7.8	2
124	Confined Anomalous Dynamics: A Fractional Diffusion Approach. Materials Research Society Symposia Proceedings, 1998, 543, 281.	0.1	2
125	From the Langevin equation to the fractional Fokkerâ€"Planck equation. AIP Conference Proceedings, 2000, , .	0.4	2
126	Following Single Molecules by Force Spectroscopy. Israel Journal of Chemistry, 2004, 44, 363-372.	2.3	2

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127	Anomalous Pulsation. Journal of Statistical Physics, 2005, 120, 587-626.	1.2	2
128	Simulations of Chemical Reactions. , 1996, , 102-120.		2
129	Frictional Forces in Thin Liquid Films. Materials Research Society Symposia Proceedings, 1994, 366, 129.	0.1	1
130	The Basic of Nanoscale Friction and Ways to Control it. Nanoscience and Technology, 2007, , 143-158.	1.5	1
131	Interface Effect on Dipole-Dipole Interaction. Materials Research Society Symposia Proceedings, 1992, 290, 209.	0.1	0
132	Thermodynamics and Kinetics in Model Light Harvesting Dendrimers. Materials Research Society Symposia Proceedings, 1998, 543, 195.	0.1	0
133	Towards a Microscopic Description of Friction. Materials Research Society Symposia Proceedings, 2000, 651, 1.	0.1	0
134	Foreword by the Guest Editors: Perspectives in the Chemical Sciences (Honoring Prof. Joshua Jortner) PART A. Israel Journal of Chemistry, 2003, 43, NA-NA.	2.3	0
135	Foreword by the Guest Editors: Perspectives in the Chemical Sciences (Honoring Prof. Joshua Jortner) PART B. Israel Journal of Chemistry, 2004, 44, NA-NA.	2.3	0
136	Reconstruction of Energy Surfaces from Friction Force Microscopy Measurements with the Jarzynski Equality. Nanoscience and Technology, 2012, , 317-334.	1.5	0