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	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
2	Test for Determining a Subdiffusive Model in Ergodic Systems from Single Trajectories. Physical Review Letters, 2013, 110, 090601.	7.8	61
3	Dynamic structure factor of vibrating fractals: Proteins as a case study. Physical Review E, 2012, 85, 011906.	2.1	15
4	Dynamic Structure Factor of Vibrating Fractals. Physical Review Letters, 2012, 108, 068101.	7.8	17
5	A probabilistic walk up power laws. Physics Reports, 2012, 511, 143-175.	25.6	35
6	Levy Statistics and Anomalous Transport: Levy Flights and Subdiffusion. , 2012, , 1724-1745.		7
7	Reconstruction of Energy Surfaces from Friction Force Microscopy Measurements with the Jarzynski Equality. Nanoscience and Technology, 2012, , 317-334.	1.5	0
8	On the generation of anomalous and ultraslow diffusion. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 405006.	2.1	10
9	Challenges in determining anomalous diffusion in crowded fluids. Journal of Physics Condensed Matter, 2011, 23, 234113.	1.8	25
10	Universal statistics and control of random transport processes. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 222001.	2.1	11
11	On the generation of log-Lévy distributions and extreme randomness. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 415003.	2.1	6
12	Accurate Quantification of Diffusion and Binding Kinetics of Non-integral Membrane Proteins by FRAP. Traffic, 2011, 12, 1648-1657.	2.7	23
13	Anomalous is ubiquitous. Annals of Physics, 2011, 326, 2517-2531.	2.8	62
14	Unequal Twins: Probability Distributions Do Not Determine Everything. Physical Review Letters, 2011, 107, 260601.	7.8	25
15	Natural and Modified Forms of Distributed-Order Fractional Diffusion Equations. , 2011, , 107-127.		12
16	Ultra diffusions. Journal of Physics A: Mathematical and Theoretical, 2010, 43, 132002.	2.1	9
17	Subdiffusion of mixed origins: When ergodicity and nonergodicity coexist. Physical Review E, 2010, 81, 010101.	2.1	96
18	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

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19	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
20	Detecting origins of subdiffusion:P-variation test for confined systems. Physical Review E, 2010, 82, 011129.	2.1	45
21	Correlations in a generalized elastic model: Fractional Langevin equation approach. Physical Review E, 2010, 82, 061104.	2.1	21
22	Randomized central limit theorems: A unified theory. Physical Review E, 2010, 82, 021122.	2.1	21
23	Universal self-similarity of propagating populations. Physical Review E, 2010, 82, 011112.	2.1	9
24	Power-law distributions: Beyond Paretian fractality. Risk and Decision Analysis, 2009, 1, 155-170.	0.4	9
25	Universal Generation of Statistical Self-Similarity: A Randomized Central Limit Theorem. Physical Review Letters, 2009, 103, 040602.	7.8	30
26	On the generation of anomalous diffusion. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 472003.	2.1	11
27	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
28	Facilitated diffusion in a crowded environment: from kinetics to stochastics. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 434012.	2.1	24
29	Fractional Brownian Motion Versus the Continuous-Time Random Walk: A Simple Test for Subdiffusive Dynamics. Physical Review Letters, 2009, 103, 180602.	7.8	286
30	From Ornstein-Uhlenbeck dynamics to long-memory processes and fractional Brownian motion. Physical Review E, 2009, 79, 021115.	2.1	20
31	Fluorescence Correlation Spectroscopy: The Case of Subdiffusion. Biophysical Journal, 2009, 96, 2055-2063.	0.5	24
32	A Role for the Juxtamembrane Cytoplasm in the Molecular Dynamics of Focal Adhesions. PLoS ONE, 2009, 4, e4304.	2.5	69
33	Paretian Poisson Processes. Journal of Statistical Physics, 2008, 131, 487-504.	1.2	34
34	From solar flare time series to fractional dynamics. Physica A: Statistical Mechanics and Its Applications, 2008, 387, 1077-1087.	2.6	19
35	Fluorescence Recovery after Photobleaching: The Case of Anomalous Diffusion. Biophysical Journal, 2008, 94, 4646-4653.	0.5	24
36	Nonergodicity Mimics Inhomogeneity in Single Particle Tracking. Physical Review Letters, 2008, 100, 250602.	7.8	281

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37	Torque and Twist against Superlubricity. Physical Review Letters, 2008, 100, 046102.	7.8	190
38	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
39	Temporal Correlation Functions of Concentration Fluctuations: An Anomalous Case. Journal of Physical Chemistry B, 2008, 112, 12740-12747.	2.6	6
40	Analyzing friction forces with the Jarzynski equality. Journal of Physics Condensed Matter, 2008, 20, 354008.	1.8	11
41	Proteins: Coexistence of Stability and Flexibility. Physical Review Letters, 2008, 100, 208101.	7.8	71
42	Fractal probability laws. Physical Review E, 2008, 77, 061125.	2.1	14
43	Markov-breaking and the emergence of long memory in Ornstein–Uhlenbeck systems. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 122001.	2.1	3
44	Searching circular DNA strands. Journal of Physics Condensed Matter, 2007, 19, 065140.	1.8	66
45	Leapover Lengths and First Passage Time Statistics for Lévy Flights. Physical Review Letters, 2007, 99, 160602.	7.8	113
46	Barrier crossing driven by Lévy noise: Universality and the role of noise intensity. Physical Review E, 2007, 75, 041101.	2.1	72
47	Manipulating Single Enzymes by an External Harmonic Force. Physical Review Letters, 2007, 98, 168302.	7.8	20
48	First passage times of Lévy flights coexisting with subdiffusion. Physical Review E, 2007, 76, 031129.	2.1	43
49	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
50	Fractal Lévy correlation cascades. Journal of Physics A: Mathematical and Theoretical, 2007, 40, F307-F314.	2.1	20
51	Some fundamental aspects of Lévy flights. Chaos, Solitons and Fractals, 2007, 34, 129-142.	5.1	53
52	Correlation cascades of Lévy-driven random processes. Physica A: Statistical Mechanics and Its Applications, 2007, 376, 1-26.	2.6	28
53	Temporal generation of power-law distributions: A universal 'oligarchy mechanism'. Physica A: Statistical Mechanics and Its Applications, 2007, 377, 53-57.	2.6	8
54	The Basic of Nanoscale Friction and Ways to Control it. Nanoscience and Technology, 2007, , 143-158.	1.5	1

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55	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
56	Nonlinear shot noise, memory systems, and all-time hit parades. Physica A: Statistical Mechanics and Its Applications, 2006, 366, 281-298.	2.6	6
57	Non-linear Shot Noise: LÃ©vy, Noah, & Joseph. Physica A: Statistical Mechanics and Its Applications, 2006, 360, 227-260.	2.6	15
58	On the active periods of nonlinear Shot Noise. Physica A: Statistical Mechanics and Its Applications, 2006, 363, 237-259.	2.6	5
59	Fundamentals of LÃ©vy Flight Processes. Advances in Chemical Physics, 2006, , 439-496.	0.3	40
60	Some new aspects of dendrimer applications. Journal of Luminescence, 2005, 111, 315-325.	3.1	24
61	Stochastic Ornstein?Uhlenbeck Capacitors. Journal of Statistical Physics, 2005, 118, 177-198.	1.2	12
62	Single-Enzyme Kinetics of CALB-Catalyzed Hydrolysis. Angewandte Chemie - International Edition, 2005, 44, 560-564.	13.8	177
63	LÃ©vy, Ornsteinâ€"Uhlenbeck, and Subordination: Spectral vs. Jump Description. Journal of Statistical Physics, 2005, 119, 165-196.	1.2	41
64	Anomalous Pulsation. Journal of Statistical Physics, 2005, 120, 587-626.	1.2	2
65	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
66	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
67	Natural cutoff in LÃ©vy flights caused by dissipative nonlinearity. Physical Review E, 2005, 72, 010101.	2.1	45
68	Fractons in Proteins: Can They Lead to Anomalously Decaying Time Autocorrelations?. Physical Review Letters, 2005, 95, 098106.	7.8	83
69	Anomalous diffusion spreads its wings. Physics World, 2005, 18, 29-32.	0.0	357
70	Closed-Form Solutions for Continuous Time Random Walks on Finite Chains. Physical Review Letters, 2005, 95, 098105.	7.8	26
71	What Can One Learn from Two-State Single-Molecule Trajectories?. Biophysical Journal, 2005, 88, 3780-3783.	0.5	78
72	On the relationships between kinetic schemes and two-state single molecule trajectories. Journal of Chemical Physics, 2005, 123, 064903.	3.0	16

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73	The nonlinear nature of friction. Nature, 2004, 430, 525-528.	27.8	610
74	LÃ©vy Flights in a Steep Potential Well. Journal of Statistical Physics, 2004, 115, 1505-1535.	1.2	125
75	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
76	On the first passage of one-sided LÃ©vy motions. Physica A: Statistical Mechanics and Its Applications, 2004, 336, 219-244.	2.6	31
77	Spatial gliding, temporal trapping, and anomalous transport. Physica D: Nonlinear Phenomena, 2004, 187, 30-50.	2.8	21
78	A growthâ€"collapse model: LÃ©vy inflow, geometric crashes, and generalized Ornsteinâ€"Uhlenbeck dynamics. Physica A: Statistical Mechanics and Its Applications, 2004, 334, 1-21.	2.6	27
79	Following Single Molecules by Force Spectroscopy. Israel Journal of Chemistry, 2004, 44, 363-372.	2.3	2
80	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
81	LÃ©vy-Driven Langevin Systems: Targeted Stochasticity. Journal of Statistical Physics, 2003, 111, 739-768.	1.2	73
82	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
83	On the extreme flights of one-sided LÃ©vy processes. Physica A: Statistical Mechanics and Its Applications, 2003, 330, 8-17.	2.6	7
84	When Translocation Dynamics Becomes Anomalous. Biophysical Journal, 2003, 85, 2776-2779.	0.5	112
85	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
86	Bifurcation, bimodality, and finite variance in confined LÃ©vy flights. Physical Review E, 2003, 67, 010102.	2.1	123
87	Fractional Kinetics. Physics Today, 2002, 55, 48-54.	0.3	574
88	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
89	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
90	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

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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	Motors on the molecular scale. Journal of Luminescence, 2001, 94-95, 137-142.	3.1	3
93	Hopping motion of interacting particles: From time-dependent interaction to directed transport. Physical Review E, 2001, 65, 011108.	2.1	14
94	From the Langevin equation to the fractional Fokker–Planck equation. AIP Conference Proceedings, 2000, , .	0.4	2
95	Towards a Microscopic Description of Friction. Materials Research Society Symposia Proceedings, 2000, 651, 1.	0.1	0
96	The fractional Fokker-Planck equation: dispersive transport in an external force field. Journal of Molecular Liquids, 2000, 86, 219-228.	4.9	29
97	The random walk's guide to anomalous diffusion: a fractional dynamics approach. Physics Reports, 2000, 339, 1-77.	25.6	7,039
98	Boundary value problems for fractional diffusion equations. Physica A: Statistical Mechanics and Its Applications, 2000, 278, 107-125.	2.6	442
99	Kramers' escape problem with anomalous kinetics: non-exponential decay of the survival probability. Chemical Physics Letters, 2000, 321, 238-242.	2.6	38
100	Macroscopic versus microscopic description of friction: from Tomlinson model to shearons. Tribology Letters, 2000, 9, 45-54.	2.6	14
101	Atomic Scale Engines: Cars and Wheels. Physical Review Letters, 2000, 84, 6058-6061.	7.8	120
102	From a Generalized Chapman–Kolmogorov Equation to the Fractional Klein–Kramers Equation†. Journal of Physical Chemistry B, 2000, 104, 3851-3857.	2.6	107
103	Subdiffusive transport close to thermal equilibrium: From the Langevin equation to fractional diffusion. Physical Review E, 2000, 61, 6308-6311.	2.1	156
104	Looking at Friction through "Shearons". Journal of Physical Chemistry B, 2000, 104, 3791-3794.	2.6	5
105	Escape from a fluctuating system: A master equation and trapping approach. Physical Review E, 1999, 60, 2554-2558.	2.1	13
106	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
107	Anomalous Diffusion and Relaxation Close to Thermal Equilibrium: A Fractional Fokker-Planck Equation Approach. Physical Review Letters, 1999, 82, 3563-3567.	7.8	678
108	Dendrimers as light harvesting antennae. Journal of Luminescence, 1998, 76-77, 197-200.	3.1	65

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109	Geometric versus Energetic Competition in Light Harvesting by Dendrimers. Journal of Physical Chemistry B, 1998, 102, 1662-1664.	2.6	122
110	On mean residence and first passage times in finite one-dimensional systems. Journal of Chemical Physics, 1998, 109, 5187-5193.	3.0	111
111	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
112	Anomalous transport in external fields: Continuous time random walks and fractional diffusion equations extended. Physical Review E, 1998, 58, 1621-1633.	2.1	196
113	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
114	Bundeet al.Reply:. Physical Review Letters, 1998, 80, 5454-5454.	7.8	2
115	Thermodynamics and Kinetics in Model Light Harvesting Dendrimers. Materials Research Society Symposia Proceedings, 1998, 543, 195.	0.1	0
116	Confined Anomalous Dynamics: A Fractional Diffusion Approach. Materials Research Society Symposia Proceedings, 1998, 543, 281.	0.1	2
117	Spectroscopic Evidence for Excitonic Localization in Fractal Antenna Supermolecules. Physical Review Letters, 1997, 78, 1239-1242.	7.8	295
118	Dendrimers as Controlled Artificial Energy Antennae. Journal of the American Chemical Society, 1997, 119, 6197-6198.	13.7	260
119	Anomalous Size Dependence of Relaxational Processes. Physical Review Letters, 1997, 78, 3338-3341.	7.8	49
120	Beyond Brownian Motion. Physics Today, 1996, 49, 33-39.	0.3	643
121	Simulations of Chemical Reactions. , 1996, , 102-120.		2
122	Frictional Forces in Thin Liquid Films. Materials Research Society Symposia Proceedings, 1994, 366, 129.	0.1	1
123	Strange kinetics. Nature, 1993, 363, 31-37.	27.8	1,024
124	Interface Effect on Dipole-Dipole Interaction. Materials Research Society Symposia Proceedings, 1992, 290, 209.	0.1	0
125	Molecular Adsorption on Porous Silica Gels from Binary Solutions. Israel Journal of Chemistry, 1991, 31, 135-145.	2.3	15
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127	Dynamics of ionic solvation. Journal of Chemical Physics, 1988, 88, 3246-3252.	3.0	186
128	Solvation dynamics in polar liquids. Journal of Chemical Physics, 1988, 89, 4288-4299.	3.0	142
129	LÃ©vy Walks Versus LÃ©vy Flights. , 1986, , 279-283.		112
130	Effects of structural disorder on twoâ€particle excitonâ€"phonon excitations in organic materials. Journal of Chemical Physics, 1982, 77, 2812-2815.	3.0	3
131	Twoâ€particle vibrational excitations in molecular crystals. Journal of Chemical Physics, 1982, 77, 2816-2824.	3.0	8
132	Random walks with infinite spatial and temporal moments. Journal of Statistical Physics, 1982, 27, 499-512.	1.2	308
133	Some features of two-particle exciton-phonon excitations in molecular crystals. Chemical Physics, 1980, 47, 25-48.	1.9	13
134	Energy trapping from localized states in mixed organic solids. Journal of Chemical Physics, 1980, 73, 1004-1004.	3.0	13
135	Electronic energy transfer in impurity bands of mixed organic solids. Journal of Chemical Physics, 1979, 71, 1961-1966.	3.0	31
136	Effects of structural disorder on the optical properties of molecular crystals. Journal of Chemical Physics, 1978, 68, 1513-1522.	3.0	97