

Eli Barkai

List of Publications by Year in descending order

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157
papers

10,047
citations

44069

48
h-index

36028

97
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159
all docs

159
docs citations

159
times ranked

4146
citing authors

#	ARTICLE	IF	CITATIONS
1	Gas of sub-recoiled laser cooled atoms described by infinite ergodic theory. Journal of Chemical Physics, 2022, 156, 044118.	3.0	4
2	Generalized virial equation for nonlinear multiplicative Langevin dynamics: Application to laser-cooled atoms. Physical Review E, 2022, 105, 024143.	2.1	6
3	Measurement-induced quantum walks. Physical Review E, 2022, 105, .	2.1	8
4	Driving quantum systems with periodic conditional measurements. Physical Review Research, 2022, 4, .	3.6	6
5	Infinite ergodic theory for three heterogeneous stochastic models with application to subrecoil laser cooling. Physical Review E, 2022, 105, .	2.1	5
6	Local equilibrium properties of ultraslow diffusion in the Sinai model. New Journal of Physics, 2022, 24, 073026.	2.9	1
7	Non-Normalizable Quasi-Equilibrium Solution of the Fokker-Planck Equation for Nonconfining Fields. Entropy, 2021, 23, 131.	2.2	4
8	Cusp of Non-Gaussian Density of Particles for a Diffusing Diffusivity Model. Entropy, 2021, 23, 231.	2.2	16
9	Uncertainty Relation between Detection Probability and Energy Fluctuations. Entropy, 2021, 23, 595.	2.2	5
10	Accurately approximating extreme value statistics. Journal of Physics A: Mathematical and Theoretical, 2021, 54, 315205.	2.1	3
11	Transitions in the Ergodicity of Subrecoil-Laser-Cooled Gases. Physical Review Letters, 2021, 127, 140605.	7.8	15
12	Randomly repeated measurements on quantum systems: correlations and topological invariants of the quantum evolution. Journal of Physics A: Mathematical and Theoretical, 2021, 54, 395302.	2.1	5
13	Big jump principle for heavy-tailed random walks with correlated increments. European Physical Journal B, 2021, 94, 1.	1.5	2
14	Aging power spectrum of membrane protein transport and other subordinated random walks. Nature Communications, 2021, 12, 6162.	12.8	24
15	Quantization of the mean decay time for non-Hermitian quantum systems. Physical Review A, 2020, 102, .	2.5	4
16	Large deviations of the ballistic Levy walk model. Physical Review E, 2020, 102, 052115.	2.1	7
17	Extreme value theory for constrained physical systems. Physical Review E, 2020, 102, 042141.	2.1	13
18	Fractional Advection-Diffusion-Asymmetry Equation. Physical Review Letters, 2020, 125, 240606.	7.8	28

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19	Infinite invariant density in a semi-Markov process with continuous state variables. <i>Physical Review E</i> , 2020, 101, 052112.	2.1	21
20	Infinite ergodic theory meets Boltzmann statistics. <i>Chaos, Solitons and Fractals</i> , 2020, 138, 109890.	5.1	19
21	Large Deviations for Continuous Time Random Walks. <i>Entropy</i> , 2020, 22, 697.	2.2	25
22	Hitchhiker model for Laplace diffusion processes. <i>Physical Review E</i> , 2020, 102, 012109.	2.1	39
23	Rare events in generalized Lévy Walks and the Big Jump principle. <i>Scientific Reports</i> , 2020, 10, 2732.	3.3	21
24	Packets of Diffusing Particles Exhibit Universal Exponential Tails. <i>Physical Review Letters</i> , 2020, 124, 060603.	7.8	70
25	Uncertainty and symmetry bounds for the quantum total detection probability. <i>Physical Review Research</i> , 2020, 2, .	3.6	15
26	Quantum walks: The mean first detected transition time. <i>Physical Review Research</i> , 2020, 2, .	3.6	15
27	Regularized Boltzmann-Gibbs statistics for a Brownian particle in a nonconfining field. <i>Physical Review Research</i> , 2020, 2, .	3.6	11
28	Dark states of quantum search cause imperfect detection. <i>Physical Review Research</i> , 2020, 2, .	3.6	16
29	Single-big-jump principle in physical modeling. <i>Physical Review E</i> , 2019, 100, 012108.	2.1	61
30	Infinite horizon billiards: Transport at the border between Gauss and Lévy universality classes. <i>Physical Review E</i> , 2019, 100, 042140.	2.1	12
31	Running measurement protocol for the quantum first-detection problem. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2019, 52, 354001.	2.1	7
32	Infinite ergodic theory for heterogeneous diffusion processes. <i>Physical Review E</i> , 2019, 99, 042138.	2.1	63
33	From Non-Normalizable Boltzmann-Gibbs Statistics to Infinite-Ergodic Theory. <i>Physical Review Letters</i> , 2019, 122, 010601.	7.8	40
34	Large fluctuations of the first detected quantum return time. <i>Physical Review Research</i> , 2019, 1, .	3.6	23
35	Transport in disordered systems: The single big jump approach. <i>Physical Review Research</i> , 2019, 1, .	3.6	22
36	Asymptotic densities from the modified Montroll-Weiss equation for coupled CTRWs. <i>European Physical Journal B</i> , 2018, 91, 1.	1.5	13

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55	Renewal Theory for a System with Internal States. <i>Mathematical Modelling of Natural Phenomena</i> , 2016, 11, 191-239.	2.4	9
56	Complementary Densities of Lévy Walks: Typical and Rare Fluctuations. <i>Mathematical Modelling of Natural Phenomena</i> , 2016, 11, 76-106.	2.4	7
57	Fractional Edgeworth expansion: Corrections to the Gaussian-Lévy central-limit theorem. <i>Physical Review E</i> , 2015, 91, 052124.	2.1	8
58	Fluctuations around equilibrium laws in ergodic continuous-time random walks. <i>Physical Review E</i> , 2015, 91, 062129.	2.1	9
59	Deviations from Boltzmann-Gibbs Statistics in Confined Optical Lattices. <i>Physical Review Letters</i> , 2015, 115, 173006.	7.8	19
60	Aging Wiener-Khinchin Theorem. <i>Physical Review Letters</i> , 2015, 115, 080602.	7.8	44
61	Asymptotic densities of ballistic Lévy walks. <i>Physical Review E</i> , 2015, 91, 022131.	2.1	40
62	Universal exploration. <i>Nature Physics</i> , 2015, 11, 807-808.	16.7	1
63	Numerical Algorithms for the Forward and Backward Fractional Feynman-Kac Equations. <i>Journal of Scientific Computing</i> , 2015, 62, 718-746.	2.3	27
64	Infinite densities for Lévy walks. <i>Physical Review E</i> , 2014, 90, 062135.	2.1	46
65	Localisation and universal fluctuations in ultraslow diffusion processes. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2014, 47, 492002.	2.1	38
66	$1/f$ noise for intermittent quantum dots exhibits non-stationarity and critical exponents. <i>New Journal of Physics</i> , 2014, 16, 113054.	2.9	39
67	From the Area under the Bessel Excursion to Anomalous Diffusion of Cold Atoms. <i>Physical Review X</i> , 2014, 4, .	8.9	81
68	Non-Normalizable Densities in Strong Anomalous Diffusion: Beyond the Central Limit Theorem. <i>Physical Review Letters</i> , 2014, 112, 110601.	7.8	83
69	Aging Renewal Theory and Application to Random Walks. <i>Physical Review X</i> , 2014, 4, .	8.9	102
70	Scaling Green-Kubo Relation and Application to Three Aging Systems. <i>Physical Review X</i> , 2014, 4, .	8.9	36
71	Anomalous diffusion models and their properties: non-stationarity, non-ergodicity, and ageing at the centenary of single particle tracking. <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 24128-24164.	2.8	1,286
72	The Distribution of the Area Under a Bessel Excursion and its Moments. <i>Journal of Statistical Physics</i> , 2014, 156, 686-706.	1.2	9

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73	Aging generates regular motions in weakly chaotic systems. <i>Physical Review E</i> , 2013, 87, .	2.1	29
74	Fluctuations of $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"> < mml:mn>1 </mml:mn> < mml:mo>/ </mml:mo> < mml:mi>f </mml:mi> </mml:math>$ Noise and the Low-Frequency Cutoff Paradox. <i>Physical Review Letters</i> , 2013, 110, 140603.	7.8	79
75	Random time averaged diffusivities for Lévy walks. <i>European Physical Journal B</i> , 2013, 86, 1.	1.5	45
76	Occupation times on a comb with ramified teeth. <i>Physical Review E</i> , 2013, 88, 052126.	2.1	18
77	Electrostatic effects in living cells. <i>Physics Today</i> , 2013, 66, 11-11.	0.3	1
78	Publisher's Note: Aging generates regular motions in weakly chaotic systems [Phys. Rev. E87, 032915 (2013)]. <i>Physical Review E</i> , 2013, 87, .	2.1	2
79	Numerical estimate of infinite invariant densities: application to Pesin-type identity. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2013, 2013, P08010.	2.3	6
80	Strange kinetics of single molecules in living cells. <i>Physics Today</i> , 2012, 65, 29-35.	0.3	476
81	Theory of Fractional Lévy Kinetics for Cold Atoms Diffusing in Optical Lattices. <i>Physical Review Letters</i> , 2012, 108, 230602.	7.8	89
82	Single particle tracking in systems showing anomalous diffusion: the role of weak ergodicity breaking. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 1800.	2.8	325
83	Residence Time Statistics for $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"> < mml:mi>N </mml:mi> </mml:math>$ Renewal Processes. <i>Physical Review Letters</i> , 2011, 107, 170601.	7.8	14
84	Fluctuations of Time Averages for Langevin Dynamics in a Binding Force Field. <i>Physical Review Letters</i> , 2011, 107, 240603.	7.8	38
85	Time Transformation for Random Walks in the Quenched Trap Model. <i>Physical Review Letters</i> , 2011, 106, 140602.	7.8	28
86	Anomalous infiltration. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2011, 2011, P05022.	2.3	23
87	Solution of the Fokker-Planck Equation with a Logarithmic Potential. <i>Journal of Statistical Physics</i> , 2011, 145, 1524-1545.	1.2	50
88	Fractional Feynman-Kac Equation for Anomalous Diffusion Functionals. , 2011, , 185-207.		1
89	On Distributions of Functionals of Anomalous Diffusion Paths. <i>Journal of Statistical Physics</i> , 2010, 141, 1071-1092.	1.2	66
90	Aging and nonergodicity beyond the Khinchin theorem. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 13228-13233.	7.1	148

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91	Infinite Covariant Density for Diffusion in Logarithmic Potentials and Optical Lattices. Physical Review Letters, 2010, 105, 120602.	7.8	100
92	Diffusion of tagged particle in an exclusion process. Physical Review E, 2010, 81, 041129.	2.1	44
93	Paradoxes of Subdiffusive Infiltration in Disordered Systems. Physical Review Letters, 2010, 104, 170603.	7.8	49
94	Pesin-Type Identity for Intermittent Dynamics with a Zero Lyapunov Exponent. Physical Review Letters, 2009, 102, 050601.	7.8	71
95	Fractional Feynman-Kac Equation for Non-Brownian Functionals. Physical Review Letters, 2009, 103, 190201.	7.8	73
96	Beyond quantum jumps: Blinking nanoscale light emitters. Physics Today, 2009, 62, 34-39.	0.3	199
97	Pitfalls In Single Particle Tracking In Living Cells. Biophysical Journal, 2009, 96, 385a.	0.5	0
98	Weakly Non-Ergodic Statistical Physics. Journal of Statistical Physics, 2008, 133, 565-586.	1.2	73
99	Photon statistics for a two-level system interacting with a sequence of two laser pulses. Physical Review A, 2008, 77, .	2.5	3
100	Random Time-Scale Invariant Diffusion and Transport Coefficients. Physical Review Letters, 2008, 101, 058101.	7.8	464
101	Probing dynamics of single molecules: Nonlinear spectroscopy approach. Journal of Chemical Physics, 2008, 129, 244702.	3.0	3
102	Weak Ergodicity Breaking in Single-Particle Dynamics. , 2008, , 365-391.		1
103	Multi-point distribution function for the continuous time random walk. Journal of Statistical Mechanics: Theory and Experiment, 2007, 2007, P08001-P08001.	2.3	25
104	Occupation Time Statistics in the Quenched Trap Model. Physical Review Letters, 2007, 98, 250601.	7.8	68
105	Strong correlations between fluctuations and response in aging transport. Physical Review E, 2007, 75, 060104.	2.1	7
106	Photon Statistics for Single-Molecule Nonlinear Spectroscopy. Physical Review Letters, 2007, 99, 208302.	7.8	14
107	Distribution of Time-Averaged Observables for Weak Ergodicity Breaking. Physical Review Letters, 2007, 99, 210601.	7.8	124
108	On Hilfer's objection to the fractional time diffusion equation. Physica A: Statistical Mechanics and Its Applications, 2007, 373, 231-236.	2.6	8

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109	Theory of single-photon control from a two-level system source. <i>Physical Review A</i> , 2006, 74, .	2.5	9
110	Theory of single photon on demand from a single molecule source. <i>Physical Chemistry Chemical Physics</i> , 2006, 8, 5056.	2.8	10
111	Photon Counting Statistics for Blinking CdSe/ZnS Quantum Dots: A Levy Walk Process. <i>Journal of Physical Chemistry B</i> , 2006, 110, 19053-19060.	2.6	63
112	Nonergodicity of a Time Series Obeying Levy Statistics. <i>Journal of Statistical Physics</i> , 2006, 122, 137-167.	1.2	70
113	Residence Time Statistics for Normal and Fractional Diffusion in a Force Field. <i>Journal of Statistical Physics</i> , 2006, 123, 883-907.	1.2	42
114	Weak ergodicity breaking with deterministic dynamics. <i>Europhysics Letters</i> , 2006, 74, 15-21.	2.0	45
115	DETERMINISTIC AGING. , 2005, , .		0
116	Statistical Analysis of Spectra of Single Impurity Molecules and Dynamics of Disordered Solids: I. Distributions of Linewidths, Moments, and Cumulants. <i>Optics and Spectroscopy (English Translation)</i> Tj ETQq0 0 OqBT /Overclock 10 Tf		
117	Super- and sub-Poissonian photon statistics for single molecule spectroscopy. <i>Journal of Chemical Physics</i> , 2005, 122, 184703.	3.0	30
118	Occupation times and ergodicity breaking in biased continuous time random walks. <i>Journal of Physics Condensed Matter</i> , 2005, 17, S4287-S4304.	1.8	19
119	Nonergodicity of Blinking Nanocrystals and Other Levy-Walk Processes. <i>Physical Review Letters</i> , 2005, 94, 080601.	7.8	154
120	Weak Ergodicity Breaking in the Continuous-Time Random Walk. <i>Physical Review Letters</i> , 2005, 94, .	7.8	253
121	Aging correlation functions for blinking nanocrystals, and other on/off stochastic processes. <i>Journal of Chemical Physics</i> , 2004, 121, 1566-1577.	3.0	101
122	Stable Equilibrium Based on Levy Statistics: A Linear Boltzmann Equation Approach. <i>Journal of Statistical Physics</i> , 2004, 115, 1537-1565.	1.2	17
123	Experimental evidence for Levy statistics in single-molecule spectroscopy in a low-temperature glass manifestation of long-range interactions. <i>Journal of Luminescence</i> , 2004, 107, 21-31.	3.1	9
124	Aging, non-ergodicity, and Levy statistics for blinking nanocrystals. <i>Israel Journal of Chemistry</i> , 2004, 44, 353-362.	2.3	7
125	THEORY OF SINGLE-MOLECULE SPECTROSCOPY: Beyond the Ensemble Average. <i>Annual Review of Physical Chemistry</i> , 2004, 55, 457-507.	10.8	266
126	Aging continuous time random walks. <i>Journal of Chemical Physics</i> , 2003, 118, 6167-6178.	3.0	132

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127	Aging in Subdiffusion Generated by a Deterministic Dynamical System. <i>Physical Review Letters</i> , 2003, 90, 104101.	7.8	141
128	Current status of single-molecule spectroscopy: Theoretical aspects. <i>Journal of Chemical Physics</i> , 2002, 117, 10980-10995.	3.0	71
129	Fractional dynamics approach to diffusion-assisted reactions in disordered media. <i>Journal of Chemical Physics</i> , 2002, 116, 2338-2341.	3.0	64
130	CTRW pathways to the fractional diffusion equation. <i>Chemical Physics</i> , 2002, 284, 13-27.	1.9	117
131	Lineshape theory and photon counting statistics for blinking quantum dots: a Lévy walk process. <i>Chemical Physics</i> , 2002, 284, 181-194.	1.9	110
132	Time-Dependent Fluctuations in Single Molecule Spectroscopy: A Generalized Wiener-Khintchine Approach. <i>Physical Review Letters</i> , 2001, 87, 207403.	7.8	75
133	From continuous time random walks to the fractional Fokker-Planck equation. <i>Physical Review E</i> , 2000, 61, 132-138.	2.1	621
134	Transition from simple to complex behavior of single molecule line shapes in disordered condensed phase. <i>Journal of Chemical Physics</i> , 2000, 113, 5853-5867.	3.0	23
135	One-dimensional stochastic Lévy-Lorentz gas. <i>Physical Review E</i> , 2000, 61, 1164-1169.	2.1	65
136	Lévy Distribution of Single Molecule Line Shape Cumulants in Glasses. <i>Physical Review Letters</i> , 2000, 84, 5339-5342.	7.8	74
137	Distribution of Variances of Single Molecules in a Disordered Lattice. <i>Journal of Physical Chemistry B</i> , 2000, 104, 342-353.	2.6	5
138	Fractional Kramers Equation. <i>Journal of Physical Chemistry B</i> , 2000, 104, 3866-3874.	2.6	184
139	Anomalous transport in disordered systems under the influence of external fields. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1999, 266, 343-350.	2.6	74
140	Distribution of single-molecule line widths. <i>Chemical Physics Letters</i> , 1999, 310, 287-295.	2.6	27
141	Stochastic One-Dimensional Lorentz Gas on a Lattice. <i>Journal of Statistical Physics</i> , 1999, 96, 325-359.	1.2	7
142	Anomalous Diffusion and Relaxation Close to Thermal Equilibrium: A Fractional Fokker-Planck Equation Approach. <i>Physical Review Letters</i> , 1999, 82, 3563-3567.	7.8	678
143	Deriving fractional Fokker-Planck equations from a generalised master equation. <i>Europhysics Letters</i> , 1999, 46, 431-436.	2.0	267
144	Biased chaotic diffusion. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1998, 249, 156-161.	2.6	1

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145	Generalized Einstein relation: A stochastic modeling approach. Physical Review E, 1998, 58, 1296-1310.	2.1	81
146	Deterministic transport in biased maps: Crossover from dispersive to regular transport. Physical Review E, 1998, 57, 5237-5246.	2.1	5
147	Comment on "Subdiffusion and Anomalous Local Viscoelasticity in Actin Networks". Physical Review Letters, 1998, 81, 1134-1134.	7.8	32
148	Crossover from Dispersive to Regular Transport in Biased Maps. Physical Review Letters, 1997, 79, 2245-2248.	7.8	50
149	Lévy walks and generalized stochastic collision models. Physical Review E, 1997, 56, 6355-6361.	2.1	27
150	Dissipation and fluctuation for a randomly kicked particle: Normal and anomalous diffusion. Chemical Physics, 1996, 212, 69-88.	1.9	15
151	Bidirectional shot noise in a singly occupied channel. Physical Review E, 1996, 54, 1161-1175.	2.1	17
152	Brownian type of motion of a randomly kicked particle far from and close to the diffusion limit. Physical Review E, 1995, 52, 1558-1570.	2.1	9
153	Simulating a Brownian type of motion: The rescaling-velocity approach versus the Langevin approach. Physical Review E, 1995, 52, 137-147.	2.1	10
154	Broken symmetries in multilayered perceptrons. Physical Review A, 1992, 45, 4146-4161.	2.5	82
155	Storage Capacity of a Multilayer Neural Network with Binary Weights. Europhysics Letters, 1991, 14, 107-112.	2.0	35
156	Properties of sparsely connected excitatory neural networks. Physical Review A, 1990, 41, 590-597.	2.5	26
157	Statistical mechanics of a multilayered neural network. Physical Review Letters, 1990, 65, 2312-2315.	7.8	77