Ralf Metzler

List of Publications by Citations

370 papers	27,124 citations	74 h-index	156 g-index
400 ext. papers	30,526 ext. citations	3.6 avg, IF	7.7 L-index

#	Paper	IF	Citations
370	The random walk's guide to anomalous diffusion: a fractional dynamics approach. *Physics Reports*, **2000**, 339, 1-77	27.7	5891
369	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		1633
368	Anomalous diffusion models and their properties: non-stationarity, non-ergodicity, and ageing at the centenary of single particle tracking. *Physical Chemistry Chemical Physics*, **2014**, 16, 24128-64	3.6	930
367	Anomalous Diffusion and Relaxation Close to Thermal Equilibrium: A Fractional Fokker-Planck Equation Approach. *Physical Review Letters*, **1999**, 82, 3563-3567	7.4	590
366	From continuous time random walks to the fractional fokker-planck equation. *Physical Review E*, **2000**, 61, 132-8	2.4	523
365	In vivo anomalous diffusion and weak ergodicity breaking of lipid granules. *Physical Review Letters*, **2011**, 106, 048103	7.4	472
364	Generalized viscoelastic models: their fractional equations with solutions. *Journal of Physics A*, **1995** , 28, 6567-6584		398
363	Random time-scale invariant diffusion and transport coefficients. *Physical Review Letters*, **2008**, 101, 058101	7.4	394
362	Strange kinetics of single molecules in living cells. *Physics Today*, **2012**, 65, 29-35	0.9	382
361	Boundary value problems for fractional diffusion equations. *Physica A: Statistical Mechanics and Its Applications*, **2000**, 278, 107-125	3.3	375
360	Fractional model equation for anomalous diffusion. *Physica A: Statistical Mechanics and Its Applications*, **1994**, 211, 13-24	3.3	348
359	Relaxation in filled polymers: A fractional calculus approach. *Journal of Chemical Physics*, **1995**, 103, 7180-7186	3.6	330
358	Lévy flights in external force fields: Langevin and fractional Fokker-Planck equations and their solutions. *Physical Review E*, **1999**, 59, 2736-2745	2.4	295
357	Single particle tracking in systems showing anomalous diffusion: the role of weak ergodicity breaking. *Physical Chemistry Chemical Physics*, **2011**, 13, 1800-12	3.6	263
356	The generalized Cattaneo equation for the description of anomalous transport processes. *Journal of Physics A*, **1997**, 30, 7277-7289		262
355	Deriving fractional Fokker-Planck equations from a generalised master equation. *Europhysics Letters*, **1999**, 46, 431-436	1.6	230
354	Anomalous diffusion of phospholipids and cholesterols in a lipid bilayer and its origins. *Physical Review Letters*, **2012**, 109, 188103	7.4	211

353	Physical pictures of transport in heterogeneous media: Advection-dispersion, random-walk, and fractional derivative formulations. *Water Resources Research*, **2002**, 38, 9-1-9-12	5.4	211
352	Optimal target search on a fast-folding polymer chain with volume exchange. *Physical Review Letters*, **2005**, 95, 260603	7.4	189
351	Levy strategies in intermittent search processes are advantageous. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 11055-11059	11.5	186
350	Anomalous diffusion and ergodicity breaking in heterogeneous diffusion processes. *New Journal of Physics*, **2013**, 15, 083039	2.9	181
349	Anomalous transport in external fields: Continuous time random walks and fractional diffusion equations extended. *Physical Review E*, **1998**, 58, 1621-1633	2.4	175
348	Fractional Brownian motion and motion governed by the fractional Langevin equation in confined geometries. *Physical Review E*, **2010**, 81, 021103	2.4	174
347	Non-Brownian diffusion in lipid membranes: Experiments and simulations. *Biochimica Et Biophysica Acta - Biomembranes*, **2016**, 1858, 2451-2467	3.8	167
346	Space- and time-fractional diffusion and wave equations, fractional Fokker–Planck equations, and physical motivation. *Chemical Physics*, **2002**, 284, 67-90	2.3	164
345	Quantitative analysis of single particle trajectories: mean maximal excursion method. *Biophysical Journal*, **2010**, 98, 1364-72	2.9	162
344	How DNA coiling enhances target localization by proteins. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 15738-42	11.5	159
343	Brownian yet Non-Gaussian Diffusion: From Superstatistics to Subordination of Diffusing Diffusivities. *Physical Review X*, **2017**, 7,	9.1	157
342	Manipulation and Motion of Organelles and Single Molecules in Living Cells. *Chemical Reviews*, **2017** , 117, 4342-4375	68.1	154
341	Facilitated diffusion with DNA coiling. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 8204-8	11.5	152
340	The dynamical foundation of fractal stream chemistry: The origin of extremely long retention times. *Geophysical Research Letters*, **2002**, 29, 5-1-5-4	4.9	152
339	Anomalous and normal diffusion of proteins and lipids in crowded lipid membranes. *Faraday Discussions*, **2013**, 161, 397-417; discussion 419-59	3.6	146
338	Fractional diffusion and Lévy stable processes. *Physical Review E*, **1997**, 55, 99-106	2.4	144
337	Anomalous diffusion and power-law relaxation of the time averaged mean squared displacement in worm-like micellar solutions. *New Journal of Physics*, **2013**, 15, 045011	2.9	137
336	First-Passage Phenomena and Their Applications **2014**,		134

335	Levy flights do not always optimize random blind search for sparse targets. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 2931-6	11.5	133
334	Polymer translocation: the first two decades and the recent diversification. *Soft Matter*, **2014**, 10, 9016-37	3.6	132
333	Subdiffusive transport close to thermal equilibrium: from the langevin equation to fractional diffusion. *Physical Review E*, **2000**, 61, 6308-11	2.4	131
332	Aging and nonergodicity beyond the Khinchin theorem. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 13228-33	11.5	127
331	Scaled Brownian motion: a paradoxical process with a time dependent diffusivity for the description of anomalous diffusion. *Physical Chemistry Chemical Physics*, **2014**, 16, 15811-7	3.6	125
330	Superdiffusion dominates intracellular particle motion in the supercrowded cytoplasm of pathogenic Acanthamoeba castellanii. *Scientific Reports*, **2015**, 5, 11690	4.9	115
329	First passage and arrival time densities for Lévy flights and the failure of the method of images. *Journal of Physics A*, **2003**, 36, L537-L544		115
328	Stationary states of non-linear oscillators driven by Lévy noise. *Chemical Physics*, **2002**, 284, 233-251	2.3	113
327	Protein Crowding in Lipid Bilayers Gives Rise to Non-Gaussian Anomalous Lateral Diffusion of Phospholipids and Proteins. *Physical Review X*, **2016**, 6,	9.1	110
326	Lévy Flights in a Steep Potential Well. *Journal of Statistical Physics*, **2004**, 115, 1505-1535	1.5	110
325	Driven polymer translocation through nanopores: Slow-vs.-fast dynamics. *Europhysics Letters*, **2009**, 88, 68006	1.6	108
324	Bifurcation, bimodality, and finite variance in confined Lévy flights. *Physical Review E*, **2003**, 67, 010102	2.4	106
323	From stretched exponential to inverse power-law: fractional dynamics, Cole–Cole relaxation processes, and beyond. *Journal of Non-Crystalline Solids*, **2002**, 305, 81-87	3.9	106
322	Fractional Dynamics **2011**,		104
321	Fractal dimension and localization of DNA knots. *Physical Review Letters*, **2007**, 98, 058102	7.4	103
320	First passages in bounded domains: when is the mean first passage time meaningful?. *Physical Review E*, **2012**, 86, 031143	2.4	101
319	When translocation dynamics becomes anomalous. *Biophysical Journal*, **2003**, 85, 2776-9	2.9	101
318	Subdiffusion and weak ergodicity breaking in the presence of a reactive boundary. *Physical Review Letters*, **2007**, 98, 200603	7.4	100

317	Aging effects and population splitting in single-particle trajectory averages. *Physical Review Letters*, **2013**, 110, 020602	7.4	99
316	Anomalous, non-Gaussian tracer diffusion in crowded two-dimensional environments. *New Journal of Physics*, **2016**, 18, 013027	2.9	96
315	Distance matters: the impact of gene proximity in bacterial gene regulation. *Physical Review Letters* , **2013**, 110, 198101	7.4	96
314	Anomalous diffusion in correlated continuous time random walks. *Journal of Physics A: Mathematical and Theoretical*, **2010**, 43, 082002	2	96
313	Population splitting, trapping, and non-ergodicity in heterogeneous diffusion processes. *Physical Chemistry Chemical Physics*, **2013**, 15, 20220-35	3.6	95
312	From a Generalized Chapman□Kolmogorov Equation to the Fractional Klein□Kramers Equation□ *Journal of Physical Chemistry B*, **2000**, 104, 3851-3857	3.4	95
311	Aging Renewal Theory and Application to Random Walks. *Physical Review X*, **2014**, 4,	9.1	93
310	Non-universal tracer diffusion in crowded media of non-inert obstacles. *Physical Chemistry Chemical Physics*, **2015**, 17, 1847-58	3.6	92
309	Leapover lengths and first passage time statistics for L□y flights. *Physical Review Letters*, **2007**, 99, 160602	7.4	92
308	Target search of N sliding proteins on a DNA. *Biophysical Journal*, **2005**, 89, 895-902	2.9	89
307	Equilibrium shapes of flat knots. *Physical Review Letters*, **2002**, 88, 188101	7.4	88
306	Inequivalence of time and ensemble averages in ergodic systems: exponential versus power-law relaxation in confinement. *Physical Review E*, **2012**, 85, 021147	2.4	85
305	Fractional relaxation processes and fractional rheological models for the description of a class of viscoelastic materials. *International Journal of Plasticity*, **2003**, 19, 941-959	7.6	84
304	ON THE RIEMANN-LIOUVILLE FRACTIONAL CALCULUS AND SOME RECENT APPLICATIONS. *Fractals* , **1995**, 03, 557-566	3.2	83
303	Generalized facilitated diffusion model for DNA-binding proteins with search and recognition states. *Biophysical Journal*, **2012**, 102, 2321-30	2.9	82
302	Random diffusivity from stochastic equations: comparison of two models for Brownian yet non-Gaussian diffusion. *New Journal of Physics*, **2018**, 20, 043044	2.9	81
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295	Fractional diffusion equation with a generalized Riemann□iouville time fractional derivative. *Journal of Physics A: Mathematical and Theoretical*, **2011**, 44, 255203	2	72
294	Fractional diffusion, waiting-time distributions, and Cattaneo-type equations. *Physical Review E*, **1998**, 57, 6409-6414	2.4	71
293	Strong defocusing of molecular reaction times results from an interplay of geometry and reaction control. *Communications Chemistry*, **2018**, 1,	6.3	70
292	Diffusion on random-site percolation clusters: theory and NMR microscopy experiments with model objects. *Physical Review E*, **2002**, 65, 021112	2.4	69
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289	Anomalous transport in disordered systems under the influence of external fields. *Physica A: Statistical Mechanics and Its Applications*, **1999**, 266, 343-350	3.3	68
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285	How molecular motors work in the crowded environment of living cells: coexistence and efficiency of normal and anomalous transport. *PLoS ONE*, **2014**, 9, e91700	3.7	65
284	Sequence sensitivity of breathing dynamics in heteropolymer DNA. *Physical Review Letters*, **2006**, 97, 128105	7.4	65
283	Diffusion and Fokker-Planck-Smoluchowski Equations with Generalized Memory Kernel. *Fractional Calculus and Applied Analysis*, **2015**, 18, 1006-1038	2.7	64
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278	Barrier crossing driven by Lévy noise: universality and the role of noise intensity. *Physical Review E*, **2007**, 75, 041101	2.4	62
277	Barrier crossing of a Lévy flight. *Europhysics Letters*, **2005**, 72, 348-354	1.6	62
276	Correlated continuous-time random walks in external force fields. *Physical Review E*, **2012**, 85, 051103	2.4	60
275	Multiple time scales for dispersive kinetics in early events of peptide folding. *Chemical Physics Letters*, **1998**, 293, 477-484	2.5	60
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269	Polymer Looping Is Controlled by Macromolecular Crowding, Spatial Confinement, and Chain Stiffness. *ACS Macro Letters*, **2015**, 4, 202-206	6.6	58
268	Crossover from anomalous to normal diffusion: truncated power-law noise correlations and applications to dynamics in lipid bilayers. *New Journal of Physics*, **2018**, 20, 103027	2.9	58
267	Facilitation of polymer looping and giant polymer diffusivity in crowded solutions of active particles. *New Journal of Physics*, **2015**, 17, 113008	2.9	56
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264	Underdamped scaled Brownian motion: (non-)existence of the overdamped limit in anomalous diffusion. *Scientific Reports*, **2016**, 6, 30520	4.9	55

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259	From continuous time random walks to the generalized diffusion equation. *Fractional Calculus and Applied Analysis*, **2018**, 21, 10-28	2.7	53
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255	Kramers-like escape driven by fractional Gaussian noise. *Physical Review E*, **2010**, 81, 041119	2.4	46
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248	Spectral Content of a Single Non-Brownian Trajectory. *Physical Review X*, **2019**, 9,	9.1	41
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244	Bulk-mediated diffusion on a planar surface: full solution. *Physical Review E*, **2012**, 86, 041101	2.4	41
243	Correlation functions for the fractional generalized Langevin equation in the presence of internal and external noise. *Journal of Mathematical Physics*, **2014**, 55, 023301	1.2	40
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236	Molecular motors pulling cargos in the viscoelastic cytosol: how power strokes beat subdiffusion. *Physical Chemistry Chemical Physics*, **2014**, 16, 16524-35	3.6	38
235	Severe slowing-down and universality of the dynamics in disordered interacting many-body systems: ageing and ultraslow diffusion. *New Journal of Physics*, **2014**, 16, 113050	2.9	38
234	First passage time statistics for two-channel diffusion. *Journal of Physics A: Mathematical and Theoretical*, **2017**, 50, 084001	2	37
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231	Towards a full quantitative description of single-molecule reaction kinetics in biological cells. *Physical Chemistry Chemical Physics*, **2018**, 20, 16393-16401	3.6	37
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229	Ageing and confinement in non-ergodic heterogeneous diffusion processes. *Journal of Physics A: Mathematical and Theoretical*, **2014**, 47, 485002	2	36
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194	The fractional Fokker-Planck equation: dispersive transport in an external force field. *Journal of Molecular Liquids*, **2000**, 86, 219-228	6	27
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190	Binding dynamics of single-stranded DNA binding proteins to fluctuating bubbles in breathing DNA. *Journal of Physics Condensed Matter*, **2005**, 17, S1841-S1869	1.8	26
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