

Frederic Bartumeus

List of Publications by Year in descending order

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Version: 2024-02-01

95
papers

5,850
citations

76326

40
h-index

79698

73
g-index

102
all docs

102
docs citations

102
times ranked

6302
citing authors

#	ARTICLE	IF	CITATIONS
1	ANIMAL SEARCH STRATEGIES: A QUANTITATIVE RANDOM-WALK ANALYSIS. <i>Ecology</i> , 2005, 86, 3078-3087.	3.2	532
2	T cell migration, search strategies and mechanisms. <i>Nature Reviews Immunology</i> , 2016, 16, 193-201.	22.7	362
3	Optimizing the Encounter Rate in Biological Interactions: Lévy versus Brownian Strategies. <i>Physical Review Letters</i> , 2002, 88, 097901.	7.8	281
4	Helical Levy walks: Adjusting searching statistics to resource availability in microzooplankton. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2003, 100, 12771-12775.	7.1	252
5	Visualizing dynamic microvillar search and stabilization during ligand detection by T cells. <i>Science</i> , 2017, 356, .	12.6	225
6	Recovery of Hypopituitarism after Neurosurgical Treatment of Pituitary Adenomas. <i>Journal of Clinical Endocrinology and Metabolism</i> , 1999, 84, 3696-3700.	3.6	189
7	MUTUAL INTERFERENCE BETWEEN PREDATORS CAN GIVE RISE TO TURING SPATIAL PATTERNS. <i>Ecology</i> , 2002, 83, 28-34.	3.2	170
8	Fractal reorientation clocks: Linking animal behavior to statistical patterns of search. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008, 105, 19072-19077.	7.1	170
9	Fishery Discards Impact on Seabird Movement Patterns at Regional Scales. <i>Current Biology</i> , 2010, 20, 215-222.	3.9	147
10	New Approaches to Human Mobility: Using Mobile Phones for Demographic Research. <i>Demography</i> , 2013, 50, 1105-1128.	2.5	147
11	Citizen science provides a reliable and scalable tool to track disease-carrying mosquitoes. <i>Nature Communications</i> , 2017, 8, 916.	12.8	137
12	Direct Evidence of Adult <i>Aedes albopictus</i> Dispersal by Car. <i>Scientific Reports</i> , 2017, 7, 14399.	3.3	135
13	LÉVY PROCESSES IN ANIMAL MOVEMENT: AN EVOLUTIONARY HYPOTHESIS. <i>Fractals</i> , 2007, 15, 151-162.	3.7	131
14	Optimal search behavior and classic foraging theory. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2009, 42, 434002.	2.1	130
15	Ecological thresholds in European alpine lakes. <i>Freshwater Biology</i> , 2009, 54, 2494-2517.	2.4	117
16	The influence of turning angles on the success of non-oriented animal searches. <i>Journal of Theoretical Biology</i> , 2008, 252, 43-55.	1.7	107
17	Expectation-Maximization Binary Clustering for Behavioural Annotation. <i>PLoS ONE</i> , 2016, 11, e0151984.	2.5	107
18	Approaches to passive mosquito surveillance in the EU. <i>Parasites and Vectors</i> , 2015, 8, 9.	2.5	106

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19	Lévy flight random searches in biological phenomena. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2002, 314, 208-213.	2.6	94
20	Age effects on long-term neuropsychological outcome in paediatric traumatic brain injury. <i>Brain Injury</i> , 2000, 14, 495-503.	1.2	89
21	Stochastic Foundations in Movement Ecology. Springer Series in Synergetics, 2014, , .	0.4	85
22	Behavioral intermittence, Lévy patterns, and randomness in animal movement. <i>Oikos</i> , 2009, 118, 488-494.	2.7	82
23	Intermittent Motion in Desert Locusts: Behavioural Complexity in Simple Environments. <i>PLoS Computational Biology</i> , 2012, 8, e1002498.	3.2	82
24	Correlation of atrophy measures on MRI with neuropsychological sequelae in children and adolescents with traumatic brain injury. <i>Brain Injury</i> , 2001, 15, 211-221.	1.2	80
25	Cavernous angiomas of the cranial nerves. <i>Journal of Neurosurgery</i> , 1990, 73, 620-622.	1.6	79
26	Foraging success under uncertainty: search tradeoffs and optimal space use. <i>Ecology Letters</i> , 2016, 19, 1299-1313.	6.4	74
27	Necessary criterion for distinguishing true superdiffusion from correlated random walk processes. <i>Physical Review E</i> , 2005, 72, 011111.	2.1	70
28	First detection of <i>Aedes japonicus</i> in Spain: an unexpected finding triggered by citizen science. <i>Parasites and Vectors</i> , 2019, 12, 53.	2.5	70
29	Unified effects of aggregation reveal larger prey groups take longer to find. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2011, 278, 2985-2990.	2.6	61
30	Stochastic Optimal Foraging: Tuning Intensive and Extensive Dynamics in Random Searches. <i>PLoS ONE</i> , 2014, 9, e106373.	2.5	56
31	Animal movement, search strategies and behavioural ecology: a cross-disciplinary way forward. <i>Journal of Animal Ecology</i> , 2010, 79, 906-909.	2.8	55
32	Optimising the success of random destructive searches: Lévy walks can outperform ballistic motions. <i>Journal of Theoretical Biology</i> , 2009, 260, 98-103.	1.7	54
33	How superdiffusion gets arrested: ecological encounters explain shift from Lévy to Brownian movement. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2014, 281, 20132605.	2.6	54
34	Experimental evidence for inherent Lévy search behaviour in foraging animals. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2015, 282, 20150424.	2.6	54
35	The main features of seasonal variability in the external forcing and dynamics of a deep mountain lake (Redó, Pyrenees). <i>Journal of Limnology</i> , 2000, 59, 97.	1.1	49
36	Lévy-taxis: a novel search strategy for finding odor plumes in turbulent flow-dominated environments. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2009, 42, 434010.	2.1	48

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37	Coupling instantaneous energy-budget models and behavioural mode analysis to estimate optimal foraging strategy: an example with wandering albatrosses. <i>Movement Ecology</i> , 2014, 2, 8.	2.8	46
38	Mechanistic analysis of the search behaviour of <i>Caenorhabditis elegans</i> . <i>Journal of the Royal Society Interface</i> , 2014, 11, 20131092.	3.4	46
39	Early-life foraging: Behavioral responses of newly fledged albatrosses to environmental conditions. <i>Ecology and Evolution</i> , 2017, 7, 6766-6778.	1.9	46
40	Sustainable innovation in vector control requires strong partnerships with communities. <i>PLoS Neglected Tropical Diseases</i> , 2019, 13, e0007204.	3.0	45
41	Self-organized spatial structures in a ratio-dependent predator-prey model. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2001, 295, 53-57.	2.6	43
42	How Landscape Heterogeneity Frames Optimal Diffusivity in Searching Processes. <i>PLoS Computational Biology</i> , 2011, 7, e1002233.	3.2	42
43	Microbial plankton assemblages, composition and biomass, during two ice-free periods in a deep high mountain lake (Estany Redó ³ , Pyrenees). <i>Journal of Limnology</i> , 1999, 58, 193.	1.1	41
44	Citizen Science: A Gateway for Innovation in Disease-Carrying Mosquito Management?. <i>Trends in Parasitology</i> , 2018, 34, 727-729.	3.3	41
45	Ant search strategies after interrupted tandem runs. <i>Journal of Experimental Biology</i> , 2010, 213, 1697-1708.	1.7	39
46	The Effects of Spatially Heterogeneous Prey Distributions on Detection Patterns in Foraging Seabirds. <i>PLoS ONE</i> , 2012, 7, e34317.	2.5	38
47	Neurinomas of the facial nerve. <i>Journal of Neurosurgery</i> , 1975, 43, 608-613.	1.6	34
48	Superdiffusion and encounter rates in diluted, low dimensional worlds. <i>European Physical Journal: Special Topics</i> , 2008, 157, 157-166.	2.6	33
49	Deep learning identification for citizen science surveillance of tiger mosquitoes. <i>Scientific Reports</i> , 2021, 11, 4718.	3.3	33
50	Ordinary and Extraordinary Movement Behaviour of Small Resident Fish within a Mediterranean Marine Protected Area. <i>PLoS ONE</i> , 2016, 11, e0159813.	2.5	33
51	Signatures of chaos in animal search patterns. <i>Scientific Reports</i> , 2016, 6, 23492.	3.3	28
52	Retention Time Variability as a Mechanism for Animal Mediated Long-Distance Dispersal. <i>PLoS ONE</i> , 2011, 6, e28447.	2.5	27
53	Role of food partitioning in structuring the zooplankton community in mountain lakes. <i>Oecologia</i> , 2003, 136, 627-634.	2.0	26
54	Rab18 Is Reduced in Pituitary Tumors Causing Acromegaly and Its Overexpression Reverts Growth Hormone Hypersecretion. <i>Journal of Clinical Endocrinology and Metabolism</i> , 2008, 93, 2269-2276.	3.6	25

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55	Bumblebees learn foraging routes through exploitation–exploration cycles. <i>Journal of the Royal Society Interface</i> , 2019, 16, 20190103.	3.4	25
56	Genetic implications of familial brain tumors. <i>Journal of Neurosurgery</i> , 1974, 41, 573-575.	1.6	24
57	Thermal stratification drives movement of a coastal apex predator. <i>Scientific Reports</i> , 2017, 7, 526.	3.3	24
58	The relative importance of the planktonic food web in the carbon cycle of an oligotrophic mountain lake in a poorly vegetated catchment (Redon, Pyrenees). <i>Journal of Limnology</i> , 1999, 58, 203.	1.1	23
59	Gap percolation in rainforests. <i>Oikos</i> , 2005, 110, 177-185.	2.7	22
60	Linking animal movement to site fidelity. <i>Journal of Mathematical Biology</i> , 2012, 64, 647-656.	1.9	22
61	Bivariate Gaussian bridges: directional factorization of diffusion in Brownian bridge models. <i>Movement Ecology</i> , 2014, 2, 5.	2.8	20
62	Modelling the three-dimensional space use of aquatic animals combining topography and Eulerian telemetry data. <i>Methods in Ecology and Evolution</i> , 2019, 10, 1551-1557.	5.2	20
63	Evaluating a key herbivorous fish as a mobile link: a Brownian bridge approach. <i>Marine Ecology - Progress Series</i> , 2013, 492, 199-210.	1.9	20
64	Spontaneous thrombosis of an intracranial aneurysm. <i>World Neurosurgery</i> , 1984, 22, 29-32.	1.3	18
65	Comment on “Inverse Square Lévy Walks are not Optimal Search Strategies for $\langle \mathbf{r}^2 \rangle \sim t^\alpha$ ”. <i>Physical Review Letters</i> , 2021, 126, 048901.	7.8	17
66	Optimal Intermittence in Search Strategies under Speed-Selective Target Detection. <i>Physical Review Letters</i> , 2012, 108, 028102.	7.8	15
67	A novel integrative approach elucidates fine-scale dispersal patchiness in marine populations. <i>Scientific Reports</i> , 2019, 9, 10796.	3.3	15
68	Reorientation patterns in central-place foraging: internal clocks and klinokinesis. <i>Journal of the Royal Society Interface</i> , 2014, 11, 20130859.	3.4	14
69	Determinants of neurosurgical outcome in pituitary tumors. <i>Journal of Endocrinological Investigation</i> , 2005, 28, 787-794.	3.3	13
70	First-passage times in multiscale random walks: The impact of movement scales on search efficiency. <i>Physical Review E</i> , 2015, 92, 052702.	2.1	13
71	Active and reactive behaviour in human mobility: the influence of attraction points on pedestrians. <i>Royal Society Open Science</i> , 2016, 3, 160177.	2.4	13
72	Variability in individual activity bursts improves ant foraging success. <i>Journal of the Royal Society Interface</i> , 2016, 13, 20160856.	3.4	12

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73	Random Search Strategies. Springer Series in Synergetics, 2014, , 177-205.	0.4	11
74	At the tip of an iceberg: citizen science and active surveillance collaborating to broaden the known distribution of <i>Aedes japonicus</i> in Spain. Parasites and Vectors, 2021, 14, 375.	2.5	11
75	Seed dispersal as a search strategy: dynamic and fragmented landscapes select for multi-scale movement strategies in plants. Movement Ecology, 2021, 9, 4.	2.8	11
76	Search times with arbitrary detection constraints. Physical Review E, 2013, 88, 022101.	2.1	10
77	Ecophysiological significance of scale-dependent patterns in prokaryotic genomes unveiled by a combination of statistic and geometric analyses. Genomics, 2008, 91, 538-543.	2.9	9
78	Stochastic Optimal Foraging Theory. Lecture Notes in Mathematics, 2013, , 3-32.	0.2	9
79	Inferring Lévy walks from curved trajectories: A rescaling method. Physical Review E, 2015, 92, 022147.	2.1	9
80	Behavioural ecology cannot turn its back on Lévy walk research. Physics of Life Reviews, 2015, 14, 84-86.	2.8	8
81	AtrapaelTigre.com: enlisting citizen-scientists in the war on tiger mosquitoes. , 2016, , 295-308.		8
82	First record of Asian tiger mosquito, <i>Aedes albopictus</i> (Diptera, Culicidae), in Anadalusia and first corroboration of the data from Tigatrapp application. Anales De Biología, 2014, , .	0.4	6
83	Landscape-scaled strategies can outperform Lévy random searches. Physical Review E, 2021, 103, 022105.	2.1	6
84	The Potential Role of School Citizen Science Programs in Infectious Disease Surveillance: A Critical Review. International Journal of Environmental Research and Public Health, 2021, 18, 7019.	2.6	6
85	Nonstationary dynamics of encounters: Mean valuable territory covered by a random searcher. Physical Review E, 2017, 96, 032111.	2.1	5
86	Generation and maintenance of predation hotspots of a functionally important herbivore in a patchy habitat mosaic. Functional Ecology, 2018, 32, 556-565.	3.6	5
87	A Langevin dynamics approach to the distribution of animal move lengths. Journal of Statistical Mechanics: Theory and Experiment, 2020, 2020, 023406.	2.3	4
88	The scent of fear makes sea urchins go ballistic. Movement Ecology, 2021, 9, 50.	2.8	4
89	Niche segregation factors in an assemblage of pelagic rotifers of a deep high-mountain lake (Redon,) Tj ETQq1 1 0.784314 rgBT /Overbo	1.8	3
90	Occupancy patterns in superorganisms: a spin-glass approach to ant exploration. Royal Society Open Science, 2020, 7, 201250.	2.4	2

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91	Biological Searches and Random Animal Motility. Springer Series in Synergetics, 2014, , 267-288.	0.4	1
92	Anomalous Diffusion and Continuous-Time Random Walks. Springer Series in Synergetics, 2014, , 113-148.	0.4	1
93	Mutual Interference between Predators Can Give Rise to Turing Spatial Patterns. Ecology, 2002, 83, 28.	3.2	1
94	Cell Motility. Springer Series in Synergetics, 2014, , 209-244.	0.4	0
95	Microscopic, Mesoscopic and Macroscopic Descriptions of Dispersal. Springer Series in Synergetics, 2014, , 63-111.	0.4	0