

Marcos G E Da Luz

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122
papers

4,848
citations

28
h-index

68
g-index

125
ext. papers

5,414
ext. citations

3.9
avg, IF

5.28
L-index

#	Paper	IF	Citations
122	Optimizing the success of random searches. <i>Nature</i> , 1999 , 401, 911-4	50.4	1098
121	Revisiting Lévy flight search patterns of wandering albatrosses, bumblebees and deer. <i>Nature</i> , 2007 , 449, 1044-8	50.4	626
120	ANIMAL SEARCH STRATEGIES: A QUANTITATIVE RANDOM-WALK ANALYSIS. <i>Ecology</i> , 2005 , 86, 3078-3087	7.6	421
119	The Physics of Foraging: An Introduction to Random Searches and Biological Encounters 2011 ,		359
118	Lévy flights and superdiffusion in the context of biological encounters and random searches. <i>Physics of Life Reviews</i> , 2008 , 5, 133-150	2.1	285
117	Lévy flights in random searches. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2000 , 282, 1-12	3.3	157
116	Average time spent by Lévy flights and walks on an interval with absorbing boundaries. <i>Physical Review E</i> , 2001 , 64, 041108	2.4	97
115	Dynamical robustness of Lévy search strategies. <i>Physical Review Letters</i> , 2003 , 91, 240601	7.4	92
114	The influence of turning angles on the success of non-oriented animal searches. <i>Journal of Theoretical Biology</i> , 2008 , 252, 43-55	2.3	87
113	Lévy flight random searches in biological phenomena. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2002 , 314, 208-213	3.3	75
112	Lévy flights search patterns of biological organisms. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2001 , 295, 85-88	3.3	60
111	Properties of Lévy flights on an interval with absorbing boundaries. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2001 , 302, 148-161	3.3	57
110	Necessary criterion for distinguishing true superdiffusion from correlated random walk processes. <i>Physical Review E</i> , 2005 , 72, 011111	2.4	56
109	Stochastic optimal foraging: tuning intensive and extensive dynamics in random searches. <i>PLoS ONE</i> , 2014 , 9, e106373	3.7	49
108	Optimal random searches of revisitable targets: Crossover from superdiffusive to ballistic random walks. <i>Europhysics Letters</i> , 2004 , 67, 734-740	1.6	49
107	The evolutionary origins of Lévy walk foraging. <i>PLoS Computational Biology</i> , 2017 , 13, e1005774	5	47
106	Improvements in the statistical approach to random Lévy flight searches. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2001 , 295, 89-92	3.3	45

105	Survival in patchy landscapes: the interplay between dispersal, habitat loss and fragmentation. <i>Scientific Reports</i> , 2015 , 5, 11898	4.9	44
104	The influence of the environment on Lévy random search efficiency: Fractality and memory effects. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2012 , 391, 3234-3246	3.3	43
103	Positional disorder enhancement of exciton dissociation at donor-acceptor interface. <i>Journal of Applied Physics</i> , 2006 , 99, 053702	2.5	43
102	How landscape heterogeneity frames optimal diffusivity in searching processes. <i>PLoS Computational Biology</i> , 2011 , 7, e1002233	5	39
101	Lévy flights and random searches. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2009 , 42, 434003	2	37
100	Carbon nanotubes based nanocomposites for photocurrent improvement. <i>Applied Surface Science</i> , 2006 , 252, 5575-5578	6.7	36
99	Search dynamics at the edge of extinction: Anomalous diffusion as a critical survival state. <i>Europhysics Letters</i> , 2007 , 77, 30002	1.6	33
98	Origin of power-law distributions in deterministic walks: the influence of landscape geometry. <i>Physical Review E</i> , 2007 , 75, 061114	2.4	32
97	Quantum scattering from arbitrary boundaries. <i>Physical Review E</i> , 1997 , 56, 2496-2507	2.4	29
96	Atomic Adsorption on Nitrogenated Holey Graphene. <i>Journal of Physical Chemistry C</i> , 2017 , 121, 3055-3068	6.8	28
95	Superdiffusion and encounter rates in diluted, low dimensional worlds. <i>European Physical Journal: Special Topics</i> , 2008 , 157, 157-166	2.3	28
94	Green functions for generalized point interactions in one dimension: A scattering approach. <i>Physical Review A</i> , 2002 , 66,	2.6	25
93	Robustness of optimal random searches in fragmented environments. <i>Physical Review E</i> , 2015 , 91, 052114	2.4	23
92	Modeling bilayer polymer/fullerene photovoltaic devices. <i>Journal of Applied Physics</i> , 2004 , 96, 40-43	2.5	23
91	Equivalence between discrete quantum walk models in arbitrary topologies. <i>Physical Review A</i> , 2009 , 80,	2.6	20
90	Green function approach for general quantum graphs. <i>Journal of Physics A</i> , 2003 , 36, L545-L551		20
89	Optimization of random searches on regular lattices. <i>Physical Review E</i> , 2005 , 72, 046143	2.4	20
88	Exact form of Green functions for segmented potentials. <i>Journal of Physics A</i> , 1998 , 31, 2975-2990		19

87	Exact propagators for moving hard-wall potentials. <i>Journal of Physics A</i> , 1992 , 25, L1043-L1047		19
86	Statistical physics of random searches. <i>Brazilian Journal of Physics</i> , 2001 , 31, 102-108	1.2	19
85	Eigenstates and scattering solutions for billiard problems: A boundary wall approach. <i>Annals of Physics</i> , 2008 , 323, 1644-1676	2.5	18
84	Conformational Change on a Bithiophene-Based Copolymer Induced by Additive Treatment: Application in Organic Photovoltaics. <i>Journal of Physical Chemistry C</i> , 2017 , 121, 16035-16044	3.8	17
83	Path integral for the quantum baker's map. <i>Nonlinearity</i> , 1995 , 8, 43-64	1.7	15
82	And yet it optimizes: Comment on "Liberating Lévy walk research from the shackles of optimal foraging" by A.M. Reynolds. <i>Physics of Life Reviews</i> , 2015 , 14, 94-8	2.1	14
81	Green's function approach for quantum graphs: An overview. <i>Physics Reports</i> , 2016 , 647, 1-46	27.7	14
80	Generic finite size scaling for discontinuous nonequilibrium phase transitions into absorbing states. <i>Physical Review E</i> , 2015 , 92, 062126	2.4	14
79	Comparing parallel- and simulated-tempering-enhanced sampling algorithms at phase-transition regimes. <i>Physical Review E</i> , 2010 , 82, 031104	2.4	14
78	General approach for studying first-order phase transitions at low temperatures. <i>Physical Review Letters</i> , 2011 , 107, 230601	7.4	14
77	The random search problem: trends and perspectives. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2009 , 42, 430301	2	14
76	Resolving the contact voltage dilemma in organic field effect transistors. <i>Physical Review B</i> , 2008 , 78,	3.3	14
75	Quantum chaos in nanoelectromechanical systems. <i>Physical Review B</i> , 2006 , 73,	3.3	13
74	Space-charge-limited bipolar currents in polymer/C60 diodes. <i>Journal of Applied Physics</i> , 2002 , 92, 5575-5577		13
73	Unveiling a mechanism for species decline in fragmented habitats: fragmentation induced reduction in encounter rates. <i>Journal of the Royal Society Interface</i> , 2014 , 11, 20130887	4.1	12
72	Exploiting a semi-analytic approach to study first order phase transitions. <i>Journal of Chemical Physics</i> , 2013 , 138, 014105	3.9	12
71	Can collective searches profit from Lévy walk strategies?. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2009 , 42, 434017	2	12
70	A generalized semiclassical expression for the eigenvalues of multiple well potentials. <i>Journal of Physics A</i> , 2003 , 36, 227-239		12

69	Modeling of organic light-emitting diodes with graded concentration in the emissive multilayer. <i>Journal of Applied Physics</i> , 2004 , 95, 2056-2062	2.5	12
68	Wave-packet dynamics for general contact interactions on a circular setup: Revivals, bouncing, and trapping. <i>Physical Review A</i> , 2004 , 69,	2.6	12
67	Asymptotic Green functions: a generalized semiclassical approach for scattering by multiple barrier potentials. <i>Journal of Physics A</i> , 2001 , 34, 5041-5057		12
66	Quantum-mechanical results for a free particle inside a box with general boundary conditions. <i>Physical Review A</i> , 1995 , 51, 1811-1819	2.6	12
65	Efficient search of multiple types of targets. <i>Physical Review E</i> , 2015 , 92, 062135	2.4	11
64	The universality class of random searches in critically scarce environments. <i>Europhysics Letters</i> , 2012 , 97, 50005	1.6	11
63	Bipolar tunnelling injection into single-layer organic light emitting devices: analytical solution using the regional approximation. <i>Journal Physics D: Applied Physics</i> , 2000 , 33, 2096-2107	3	11
62	Third law of thermodynamics as a key test of generalized entropies. <i>Physical Review E</i> , 2015 , 91, 022105	2.4	10
61	Resonant scattering states in 2D nanostructured waveguides: a boundary wall approach. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2009 , 42, 025402	1.3	10
60	A simple protocol for the probability weights of the simulated tempering algorithm: applications to first-order phase transitions. <i>Journal of Chemical Physics</i> , 2010 , 133, 244102	3.9	10
59	Improving light harvesting in polymer photodetector devices through nanoindented metal mask films. <i>Journal of Applied Physics</i> , 2008 , 104, 033714	2.5	10
58	Origin of quantum chaos for two particles interacting by short-range potentials. <i>Physical Review E</i> , 2001 , 64, 026201	2.4	10
57	Charge Injection into Thin Conjugated Polymer Films. <i>Physica Status Solidi A</i> , 1999 , 173, 29-39		10
56	Propagator for the delta -function potential moving with constant velocity. <i>Physical Review A</i> , 1993 , 47, 4720-4724	2.6	10
55	Stochastic Optimal Foraging Theory. <i>Lecture Notes in Mathematics</i> , 2013 , 3-32	0.4	9
54	Optimization of random searches on defective lattice networks. <i>Physical Review E</i> , 2008 , 77, 041101	2.4	9
53	Piecewise time-independent procedure to control two-level systems. <i>Physical Review A</i> , 2007 , 75,	2.6	9
52	Green-function approach for scattering quantum walks. <i>Physical Review A</i> , 2011 , 84,	2.6	8

51	Conditions under which a superdiffusive random-search strategy is necessary. <i>Physical Review E</i> , 2012 , 86, 031133	2.4	8
50	Evidence of fractal structure for charge transport in carbon-nanotube/conjugated-polymer composites. <i>Europhysics Letters</i> , 2007 , 79, 47011	1.6	8
49	Inferring Lévy walks from curved trajectories: A rescaling method. <i>Physical Review E</i> , 2015 , 92, 022147	2.4	7
48	Dissipative Lévy random searches: universal behavior at low target density. <i>Physical Review E</i> , 2012 , 86, 061102	2.4	7
47	Quantum chaos for two interacting particles confined to a circular billiard. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2004 , 342, 377-382	3.3	7
46	On the propagators for hard-wall potentials oscillating periodically with constant velocity. <i>Physica D: Nonlinear Phenomena</i> , 1994 , 72, 244-258	3.3	7
45	Comment on "Inverse Square Lévy Walks are not Optimal Search Strategies for $d \geq 2$ ". <i>Physical Review Letters</i> , 2021 , 126, 048901	7.4	7
44	Punctuated equilibrium as an emergent process and its modified thermodynamic characterization. <i>Journal of Theoretical Biology</i> , 2017 , 412, 113-122	2.3	6
43	Finite-size scaling for discontinuous nonequilibrium phase transitions. <i>Physical Review E</i> , 2018 , 97, 060104	2.4	6
42	Unveiling and exemplifying the unitary equivalence of discrete time quantum walk models. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2013 , 46, 165302	2	6
41	Anomalous quantum chaotic behaviour in suspended electromechanical nanostructures. <i>Journal of Physics A</i> , 2005 , 38, L639-L645		6
40	Electrical aspects of photovoltaic devices based on bi-layer organic semiconducting materials. <i>Microelectronics Journal</i> , 2005 , 36, 995-997	1.8	6
39	Time-dependent point interactions and infinite walls: some results for wavepacket scattering. <i>Journal of Optics B: Quantum and Semiclassical Optics</i> , 2005 , 7, S77-S85		6
38	Electrical characteristics in unipolar conjugated polymer devices: the case of modified transport properties in the neighbourhood of the top electrode/polymer interface. <i>Journal Physics D: Applied Physics</i> , 2001 , 34, 1947-1950	3	6
37	Electronic and structural properties of fluorene-thiophene copolymers as function of the composition ratio between the moieties: a theoretical study. <i>Physical Chemistry Chemical Physics</i> , 2018 , 20, 20447-20458	3.6	6
36	A parallel algorithm for random searches. <i>Computer Physics Communications</i> , 2015 , 196, 390-397	4.2	5
35	Why Lévy stable distributions lack general closed-form expressions for arbitrary μ . <i>Physical Review E</i> , 2019 , 100, 010103	2.4	5
34	Determining efficient temperature sets for the simulated tempering method. <i>Computer Physics Communications</i> , 2014 , 185, 2046-2055	4.2	5

33	Emergence of Distinct Spatial Patterns in Cellular Automata with Inertia: A Phase Transition-Like Behavior. <i>Entropy</i> , 2017 , 19, 102	2.8	5
32	The current-voltage characteristics of polymer/C60 diodes in the dark: A direct way to assess photovoltaic devices efficiency parameters. <i>Applied Physics Letters</i> , 2013 , 103, 033304	3.4	5
31	Complex dynamics of life at different scales: from genomic to global environmental issues. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2010 , 368, 5561-8	3	5
30	Classifying the general family of 1D point interactions: a scattering approach. <i>Journal of Physics A</i> , 2006 , 39, 2493-2508		5
29	The current-voltage dependence of nominally undoped thin conjugated polymer films. <i>Applied Physics Letters</i> , 2000 , 77, 693-695	3.4	5
28	Exact propagator for a two-dimensional inverse quadratic oscillator interacting with a wedge. <i>Journal of Physics A</i> , 1992 , 25, 2033-2042		5
27	Subjective expectation of rewards can change the behavior of smart but impatient foragers. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, 8571-3	11.5	4
26	Looking for the Source of Change. <i>Foundations of Physics</i> , 2016 , 46, 1495-1501	1.2	4
25	Awareness of and signaling between entities with opposite thermodynamic arrows of time. <i>Europhysics Letters</i> , 2014 , 106, 10003	1.6	4
24	Nonlinear dynamics in meso and nano scales: fundamental aspects and applications. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2011 , 369, 245-59	3	4
23	Superdiffusivity of quantum walks: A Feynman sum-over-paths description. <i>Physical Review A</i> , 2012 , 86,	2.6	4
22	Path integrals and edge corrections for torus maps. <i>Physica D: Nonlinear Phenomena</i> , 1996 , 94, 1-18	3.3	4
21	General tracking control of arbitrary N-level quantum systems using piecewise time-independent potentials. <i>Quantum Information Processing</i> , 2016 , 15, 1955-1978	1.6	3
20	Determining and characterizing families of electronic resonance states in open and closed coupled cavities. <i>European Physical Journal B</i> , 2012 , 85, 1	1.2	3
19	The time-of-flight signal in a Gaussian disordered chain. <i>Journal of Chemical Physics</i> , 2003 , 119, 2348-2354	4.9	3
18	Perspectives and Challenges in Statistical Physics and Complex Systems for the Next Decade 2014 ,		3
17	Landscape-scaled strategies can outperform Lloyd random searches. <i>Physical Review E</i> , 2021 , 103, 022105	2.4	3
16	A Langevin dynamics approach to the distribution of animal move lengths. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2020 , 2020, 023406	1.9	2

15	A formal power series expansion regularization approach for Lévy stable distributions: the symmetric case with $\alpha = 2/M$ (M positive integer). <i>Journal of Physics A: Mathematical and Theoretical</i> , 2016 , 49, 375001	2	2
14	Anomalous maximum and minimum for the dissociation of a geminate pair in energetically disordered media. <i>Chemical Physics Letters</i> , 2015 , 620, 123-128	2.5	2
13	Revisiting Lévy flights on bounded domains: a Fock space approach. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2020 , 2020, 083202	1.9	2
12	Reply to "Comment on 'Third law of thermodynamics as a key test of generalized entropies' ". <i>Physical Review E</i> , 2015 , 92, 016104	2.4	1
11	Cellular automata with inertia: species competition, spatial patterns, and survival in ecotones. <i>Journal of Physics: Conference Series</i> , 2010 , 246, 012040	0.3	1
10	Improving wave-packet revivals in circular billiards by applying constant magnetic fields. <i>Physical Review A</i> , 2006 , 73,	2.6	1
9	Electrical optimization of single-layer light-emitting diodes based on binary organic semiconductor blends. <i>Journal Physics D: Applied Physics</i> , 2005 , 38, 260-265	3	1
8	Soliton-like structures in the spectrum and the corresponding eigenstates morphology for the quantum desymmetrized Sinai billiard. <i>Chaos</i> , 2021 , 31, 113122	3.3	1
7	Transient dynamics in a nonequilibrium superdiffusive reaction-diffusion process: Nonequilibrium random search as a case study. <i>Physical Review E</i> , 2020 , 102, 012126	2.4	1
6	Mean first passage time and absorption probabilities of a Lévy flier on a finite interval: discrete space and continuous limit via Fock space approach. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2021 , 54, 325006	2	0
5	Spanning tree generating functions for infinite periodic graphs L and connections with simple closed random walks on L . <i>Journal of Physics A: Mathematical and Theoretical</i> , 2021 , 54, 325005	2	0
4	A direct approach to calculate the temperature dependence of the electronic relaxation time in 2D semiconductors from Boltzmann transport theory. <i>Journal of Applied Physics</i> , 2022 , 131, 115704	2.5	0
3	Space-Charge-Limited Bipolar Currents at High Fields in Polymer/C60 Diodes: A Simple Model Description. <i>Advanced Materials Research</i> , 2013 , 747, 591-594	0.5	
2	The dynamics of complex-amplitude norm-preserving lattices of coupled oscillators. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2004 , 338, 537-543	3.3	
1	The flexibility in choosing distinct Green's functions for the boundary wall method: waveguides and billiards. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2022 , 55, 175201	2	