Marcos G E Da Luz

List of Publications by Year
in descending order

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121 papers	5,950 citations	201575 27 h-index	85498 71 g-index
125 all docs	125 docs citations	125 times ranked	3957 citing authors

#	Article	IF	Citations
1	Optimizing the success of random searches. Nature, 1999, 401, 911-914.	13.7	1,370
2	Revisiting LÃ©vy flight search patterns of wandering albatrosses, bumblebees and deer. Nature, 2007, 449, 1044-1048.	13.7	736
3	ANIMAL SEARCH STRATEGIES: A QUANTITATIVE RANDOM-WALK ANALYSIS. Ecology, 2005, 86, 3078-3087.	1.5	532
4	LÃ©vy flights and superdiffusion in the context of biological encounters and random searches. Physics of Life Reviews, 2008, 5, 133-150.	1.5	368
5	LÃ©vy flights in random searches. Physica A: Statistical Mechanics and Its Applications, 2000, 282, 1-12.	1.2	199
6	Average time spent by LÃ©vy flights and walks on an interval with absorbing boundaries. Physical Review E, 2001, 64, 041108.	0.8	112
7	The influence of turning angles on the success of non-oriented animal searches. Journal of Theoretical Biology, 2008, 252, 43-55.	0.8	107
8	Dynamical Robustness of LÃ©vy Search Strategies. Physical Review Letters, 2003, 91, 240601.	2.9	106
9	LÃ©vy flight random searches in biological phenomena. Physica A: Statistical Mechanics and Its Applications, 2002, 314, 208-213.	1.2	94
10	Necessary criterion for distinguishing true superdiffusion from correlated random walk processes. Physical Review E, 2005, 72, 011111.	0.8	70
11	LÃ©vy flights search patterns of biological organisms. Physica A: Statistical Mechanics and Its Applications, 2001, 295, 85-88.	1.2	68
12	The evolutionary origins of LÃ©vy walk foraging. PLoS Computational Biology, 2017, 13, e1005774.	1.5	67
13	Properties of LÃ©vy flights on an interval with absorbing boundaries. Physica A: Statistical Mechanics and Its Applications, 2001, 302, 148-161.	1.2	66
14	Optimal random searches of revisitable targets: Crossover from superdiffusive to ballistic random walks. Europhysics Letters, 2004, 67, 734-740.	0.7	63
15	Survival in patchy landscapes: the interplay between dispersal, habitat loss and fragmentation. Scientific Reports, 2015, 5, 11898.	1.6	63
16	Stochastic Optimal Foraging: Tuning Intensive and Extensive Dynamics in Random Searches. PLoS ONE, 2014, 9, e106373.	1.1	56
17	LÃ©vy flights and random searches. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 434003.	0.7	54
18	The influence of the environment on LÃ©vy random search efficiency: Fractality and memory effects. Physica A: Statistical Mechanics and Its Applications, 2012, 391, 3234-3246.	1.2	53

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19	Improvements in the statistical approach to random LÃ©vy flight searches. Physica A: Statistical Mechanics and Its Applications, 2001, 295, 89-92.	1.2	51
20	Positional disorder enhancement of exciton dissociation at donorâ•acceptor interface. Journal of Applied Physics, 2006, 99, 053702.	1.1	51
21	Search dynamics at the edge of extinction: Anomalous diffusion as a critical survival state. Europhysics Letters, 2007, 77, 30002.	0.7	42
22	How Landscape Heterogeneity Frames Optimal Diffusivity in Searching Processes. PLoS Computational Biology, 2011, 7, e1002233.	1.5	42
23	Carbon nanotubes based nanocomposites for photocurrent improvement. Applied Surface Science, 2006, 252, 5575-5578.	3.1	40
24	Origin of power-law distributions in deterministic walks: The influence of landscape geometry. Physical Review E, 2007, 75, 061114.	0.8	37
25	Atomic Adsorption on Nitrogenated Holey Graphene. Journal of Physical Chemistry C, 2017, 121, 3055-3061.	1.5	37
26	Quantum scattering from arbitrary boundaries. Physical Review E, 1997, 56, 2496-2507.	0.8	36
27	Superdiffusion and encounter rates in diluted, low dimensional worlds. European Physical Journal: Special Topics, 2008, 157, 157-166.	1.2	33
28	Robustness of optimal random searches in fragmented environments. Physical Review E, 2015, 91, 052119.	0.8	30
29	Green functions for generalized point interactions in one dimension: A scattering approach. Physical Review A, 2002, 66, .	1.0	27
30	Optimization of random searches on regular lattices. Physical Review E, 2005, 72, 046143.	0.8	26
31	Statistical physics of random searches. Brazilian Journal of Physics, 2001, 31, 102-108.	0.7	26
32	Green function approach for general quantum graphs. Journal of Physics A, 2003, 36, L545-L551.	1.6	24
33	Modeling bilayer polymer/fullerene photovoltaic devices. Journal of Applied Physics, 2004, 96, 40-43.	1.1	24
34	Eigenstates and scattering solutions for billiard problems: A boundary wall approach. Annals of Physics, 2008, 323, 1644-1676.	1.0	24
35	Equivalence between discrete quantum walk models in arbitrary topologies. Physical Review A, 2009, 80, .	1.0	23
36	Generic finite size scaling for discontinuous nonequilibrium phase transitions into absorbing states. Physical Review E, 2015, 92, 062126.	0.8	22

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37	Exact form of Green functions for segmented potentials. Journal of Physics A, 1998, 31, 2975-2990.	1.6	21
38	Greenâ€™s function approach for quantum graphs: An overview. Physics Reports, 2016, 647, 1-46.	10.3	20
39	Exact propagators for moving hard-wall potentials. Journal of Physics A, 1992, 25, L1043-L1047.	1.6	19
40	Can collective searches profit from LÃ©vy walk strategies?. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 434017.	0.7	18
41	Conformational Change on a Bithiophene-Based Copolymer Induced by Additive Treatment: Application in Organic Photovoltaics. Journal of Physical Chemistry C, 2017, 121, 16035-16044.	1.5	18
42	Unveiling a mechanism for species decline in fragmented habitats: fragmentation induced reduction in encounter rates. Journal of the Royal Society Interface, 2014, 11, 20130887.	1.5	17
43	Comment on â€œInverse Square LÃ©vy Walks are not Optimal Search Strategies for <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>d</mml:mi><mml:mo>â‰¥</mml:mo><mml:mn>2</mml:mn></mml:math> â€. Physical Review Letters, 2021, 126, 048901.	2.9	17
44	Path integral for the quantum baker's map. Nonlinearity, 1995, 8, 43-64.	0.6	16
45	Quantum chaos in nanoelectromechanical systems. Physical Review B, 2006, 73, .	1.1	16
46	Resonant scattering states in 2D nanostructured waveguides: a boundary wall approach. Journal of Physics B: Atomic, Molecular and Optical Physics, 2009, 42, 025402.	0.6	16
47	And yet it optimizes. Physics of Life Reviews, 2015, 14, 94-98.	1.5	16
48	Quantum-mechanical results for a free particle inside a box with general boundary conditions. Physical Review A, 1995, 51, 1811-1819.	1.0	15
49	Resolving the contact voltage dilemma in organic field effect transistors. Physical Review B, 2008, 78, .	1.1	15
50	The random search problem: trends and perspectives. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 430301.	0.7	15
51	Comparing parallel- and simulated-tempering-enhanced sampling algorithms at phase-transition regimes. Physical Review E, 2010, 82, 031104.	0.8	15
52	General Approach for Studying First-Order Phase Transitions at Low Temperatures. Physical Review Letters, 2011, 107, 230601.	2.9	15
53	Modeling of organic light-emitting diodes with graded concentration in the emissive multilayer. Journal of Applied Physics, 2004, 95, 2056-2062.	1.1	14
54	The universality class of random searches in critically scarce environments. Europhysics Letters, 2012, 97, 50005.	0.7	14

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55	Third law of thermodynamics as a key test of generalized entropies. Physical Review E, 2015, 91, 022105.	0.8	14
56	Bipolar tunnelling injection into single-layer organic light emitting devices: analytical solution using the regional approximation. Journal Physics D: Applied Physics, 2000, 33, 2096-2107.	1.3	13
57	Asymptotic Green functions: a generalized semiclassical approach for scattering by multiple barrier potentials. Journal of Physics A, 2001, 34, 5041-5057.	1.6	13
58	Space-charge-limited bipolar currents in polymer/C60 diodes. Journal of Applied Physics, 2002, 92, 5575-5577.	1.1	13
59	A generalized semiclassical expression for the eigenvalues of multiple well potentials. Journal of Physics A, 2003, 36, 227-239.	1.6	13
60	Exploiting a semi-analytic approach to study first order phase transitions. Journal of Chemical Physics, 2013, 138, 014105.	1.2	13
61	Efficient search of multiple types of targets. Physical Review E, 2015, 92, 062135.	0.8	13
62	Wave-packet dynamics for general contact interactions on a circular setup: Revivals, bouncing, and trapping. Physical Review A, 2004, 69, .	1.0	12
63	Propagator for the Î´-function potential moving with constant velocity. Physical Review A, 1993, 47, 4720-4724.	1.0	11
64	Charge Injection into Thin Conjugated Polymer Films. Physica Status Solidi A, 1999, 173, 29-39.	1.7	11
65	Piecewise time-independent procedure to control two-level systems. Physical Review A, 2007, 75, .	1.0	11
66	Improving light harvesting in polymer photodetector devices through nanoindented metal mask films. Journal of Applied Physics, 2008, 104, 033714.	1.1	11
67	Origin of quantum chaos for two particles interacting by short-range potentials. Physical Review E, 2001, 64, 026201.	0.8	10
68	Optimization of random searches on defective lattice networks. Physical Review E, 2008, 77, 041101.	0.8	10
69	A simple protocol for the probability weights of the simulated tempering algorithm: Applications to first-order phase transitions. Journal of Chemical Physics, 2010, 133, 244102.	1.2	10
70	Complex dynamics of life at different scales: from genomic to global environmental issues. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2010, 368, 5561-5568.	1.6	9
71	Stochastic Optimal Foraging Theory. Lecture Notes in Mathematics, 2013, , 3-32.	0.1	9
72	Unveiling and exemplifying the unitary equivalence of discrete time quantum walk models. Journal of Physics A: Mathematical and Theoretical, 2013, 46, 165302.	0.7	9

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73	Inferring LÃ©vy walks from curved trajectories: A rescaling method. Physical Review E, 2015, 92, 022147.	0.8	9
74	Anomalous quantum chaotic behaviour in suspended electromechanical nanostructures. Journal of Physics A, 2005, 38, L639-L645.	1.6	8
75	Evidence of fractal structure for charge transport in carbon-nanotube/conjugated-polymer composites. Europhysics Letters, 2007, 79, 47011.	0.7	8
76	Green-function approach for scattering quantum walks. Physical Review A, 2011, 84, .	1.0	8
77	Conditions under which a superdiffusive random-search strategy is necessary. Physical Review E, 2012, 86, 031133.	0.8	8
78	A parallel algorithm for random searches. Computer Physics Communications, 2015, 196, 390-397.	3.0	8
79	Finite-size scaling for discontinuous nonequilibrium phase transitions. Physical Review E, 2018, 97, 060101.	0.8	8
80	On the propagators for hard-wall potentials oscillating periodically with constant velocity. Physica D: Nonlinear Phenomena, 1994, 72, 244-258.	1.3	7
81	Quantum chaos for two interacting particles confined to a circular billiard. Physica A: Statistical Mechanics and Its Applications, 2004, 342, 377-382.	1.2	7
82	Time-dependent point interactions and infinite walls: some results for wavepacket scattering. Journal of Optics B: Quantum and Semiclassical Optics, 2005, 7, S77-S85.	1.4	7
83	Dissipative LÃ©vy random searches: Universal behavior at low target density. Physical Review E, 2012, 86, 061102.	0.8	7
84	Exact propagator for a two-dimensional inverse quadratic oscillator interacting with a wedge. Journal of Physics A, 1992, 25, 2033-2042.	1.6	6
85	The currentâ€“voltage dependence of nominally undoped thin conjugated polymer films. Applied Physics Letters, 2000, 77, 693-695.	1.5	6
86	Electrical characteristics in unipolar conjugated polymer devices: the case of modified transport properties in the neighbourhood of the top electrode/polymer interface. Journal Physics D: Applied Physics, 2001, 34, 1947-1950.	1.3	6
87	Electrical aspects of photovoltaic devices based on bi-layer organic semiconducting materials. Microelectronics Journal, 2005, 36, 995-997.	1.1	6
88	Determining efficient temperature sets for the simulated tempering method. Computer Physics Communications, 2014, 185, 2046-2055.	3.0	6
89	Punctuated equilibrium as an emergent process and its modified thermodynamic characterization. Journal of Theoretical Biology, 2017, 412, 113-122.	0.8	6
90	Emergence of Distinct Spatial Patterns in Cellular Automata with Inertia: A Phase Transition-Like Behavior. Entropy, 2017, 19, 102.	1.1	6

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91	Electronic and structural properties of fluoreneâ€“thiophene copolymers as function of the composition ratio between the moieties: a theoretical study. Physical Chemistry Chemical Physics, 2018, 20, 20447-20458.	1.3	6
92	Landscape-scaled strategies can outperform LÃ©vy random searches. Physical Review E, 2021, 103, 022105.	0.8	6
93	Classifying the general family of 1D point interactions: a scattering approach. Journal of Physics A, 2006, 39, 2493-2508.	1.6	5
94	Nonlinear dynamics in meso and nano scales: fundamental aspects and applications. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 245-259.	1.6	5
95	The current-voltage characteristics of polymer/C60 diodes in the dark: A direct way to assess photovoltaic devices efficiency parameters. Applied Physics Letters, 2013, 103, 033304.	1.5	5
96	Awareness of and signaling between entities with opposite thermodynamic arrows of time. Europhysics Letters, 2014, 106, 10003.	0.7	5
97	Looking for the Source of Change. Foundations of Physics, 2016, 46, 1495-1501.	0.6	5
98	General tracking control of arbitrary N-level quantum systems using piecewise time-independent potentials. Quantum Information Processing, 2016, 15, 1955-1978.	1.0	5
99	Why LÃ©vy <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î±</mml:mi></mml:math> -stable distributions lack general closed-form expressions for arbitrary <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î±</mml:mi></mml:math>. Physical Review E, 2019, 100, 010103.	0.8	5
100	Path integrals and edge corrections for torus maps. Physica D: Nonlinear Phenomena, 1996, 94, 1-18.	1.3	4
101	Superdiffusivity of quantum walks: A Feynman sum-over-paths description. Physical Review A, 2012, 86, .	1.0	4
102	Determining and characterizing families of electronic resonance states in open and closed coupled cavities. European Physical Journal B, 2012, 85, 1.	0.6	4
103	Subjective expectation of rewards can change the behavior of smart but impatient foragers. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 8571-8573.	3.3	4
104	A Langevin dynamics approach to the distribution of animal move lengths. Journal of Statistical Mechanics: Theory and Experiment, 2020, 2020, 023406.	0.9	4
105	Revisiting LÃ©vy flights on bounded domains: a Fock space approach. Journal of Statistical Mechanics: Theory and Experiment, 2020, 2020, 083202.	0.9	4
106	A direct approach to calculate the temperature dependence of the electronic relaxation time in 2D semiconductors from Boltzmann transport theory. Journal of Applied Physics, 2022, 131, .	1.1	4
107	The time-of-flight signal in a Gaussian disordered chain. Journal of Chemical Physics, 2003, 119, 2348-2354.	1.2	3
108	Anomalous maximum and minimum for the dissociation of a geminate pair in energetically disordered media. Chemical Physics Letters, 2015, 620, 123-128.	1.2	3

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109	A formal power series expansionâ€“regularization approach for LÃ©vy stable distributions: the symmetric case with $alpha =2/M$ (Mpositive integer). Journal of Physics A: Mathematical and Theoretical, 2016, 49, 375001.	0.7	2
110	Mean first passage time and absorption probabilities of a LÃ©vy flier on a finite interval: discrete space and continuous limit via Fock space approach. Journal of Physics A: Mathematical and Theoretical, 2021, 54, 325006.	0.7	2
111	Soliton-like structures in the spectrum and the corresponding eigenstates morphology for the quantum desymmetrized Sinai billiard. Chaos, 2021, 31, 113122.	1.0	2
112	The flexibility in choosing distinct Greenâ€™s functions for the boundary wall method: waveguides and billiards. Journal of Physics A: Mathematical and Theoretical, 2022, 55, 175201.	0.7	2
113	Electrical optimization of single-layer light-emitting diodes based on binary organic semiconductor blends. Journal Physics D: Applied Physics, 2005, 38, 260-265.	1.3	1
114	Improving wave-packet revivals in circular billiards by applying constant magnetic fields. Physical Review A, 2006, 73, .	1.0	1
115	Cellular automata with inertia: species competition, spatial patterns, and survival in ecotones. Journal of Physics: Conference Series, 2010, 246, 012040.	0.3	1
116	Reply to â€œComment on â€˜Third law of thermodynamics as a key test of generalized entropiesâ€™ â€. Physical Review E, 2015, 92, 016104.	0.8	1
117	Transient dynamics in a nonequilibrium superdiffusive reaction-diffusion process: Nonequilibrium random search as a case study. Physical Review E, 2020, 102, 012126.	0.8	1
118	Scale-free behavior in hailstone sequences generated by the Collatz map. Physical Review Research, 2021, 3, .	1.3	1
119	Spanning tree generating functions for infinite periodic graphs L and connections with simple closed random walks on L. Journal of Physics A: Mathematical and Theoretical, 2021, 54, 325005.	0.7	1
120	The dynamics of complex-amplitude norm-preserving lattices of coupled oscillators. Physica A: Statistical Mechanics and Its Applications, 2004, 338, 537-543.	1.2	0
121	Space-Charge-Limited Bipolar Currents at High Fields in Polymer/C₆₀ Diodes: A Simple Model Description. Advanced Materials Research, 0, 747, 591-594.	0.3	0