

# Roland Bouffanais

## List of Publications by Year in descending order

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Version: 2024-02-01

114  
papers

1,507  
citations

361413

20  
h-index

395702

33  
g-index

117  
all docs

117  
docs citations

117  
times ranked

1293  
citing authors

#	ARTICLE	IF	CITATIONS
1	Nonequilibrium Electron Interactions in Metal Films. <i>Physical Review Letters</i> , 1998, 81, 922-925.	7.8	125
2	Influence of the number of topologically interacting neighbors on swarm dynamics. <i>Scientific Reports</i> , 2014, 4, 4184.	3.3	90
3	Large-eddy simulation of the flow in a lid-driven cubical cavity. <i>Physics of Fluids</i> , 2007, 19, 055108.	4.0	66
4	Three-dimensional electromagnetic breathers in carbon nanotubes with the field inhomogeneity along their axes. <i>Journal of Applied Physics</i> , 2013, 114, .	2.5	63
5	Swarm-Enabling Technology for Multi-Robot Systems. <i>Frontiers in Robotics and AI</i> , 2017, 4, .	3.2	50
6	Design and Control of Swarm Dynamics. <i>SpringerBriefs in Complexity</i> , 2016, , .	0.1	48
7	Optimal network topology for responsive collective behavior. <i>Science Advances</i> , 2019, 5, eaau0999.	10.3	47
8	Self-organizing maps for storage and transfer of knowledge in reinforcement learning. <i>Adaptive Behavior</i> , 2019, 27, 111-126.	1.9	46
9	Distributed system of autonomous buoys for scalable deployment and monitoring of large waterbodies. <i>Autonomous Robots</i> , 2018, 42, 1669-1689.	4.8	41
10	Cities " try to predict superspreading hotspots for COVID-19. <i>Nature</i> , 2020, 583, 352-355.	27.8	41
11	Advances and challenges of applied large-eddy simulation. <i>Computers and Fluids</i> , 2010, 39, 735-738.	2.5	35
12	Consensus reaching in swarms ruled by a hybrid metric-topological distance. <i>European Physical Journal B</i> , 2014, 87, 1.	1.5	35
13	Resilience and Controllability of Dynamic Collective Behaviors. <i>PLoS ONE</i> , 2013, 8, e82578.	2.5	34
14	A coupled approximate deconvolution and dynamic mixed scale model for large-eddy simulation. <i>Journal of Computational Physics</i> , 2007, 224, 241-266.	3.8	33
15	Hydrodynamic object recognition using pressure sensing. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2011, 467, 19-38.	2.1	33
16	Effect of Correlations in Swarms on Collective Response. <i>Scientific Reports</i> , 2017, 7, 10388.	3.3	31
17	Large-Eddy Simulation of the Lid-Driven Cubic Cavity Flow by the Spectral Element Method. <i>Journal of Scientific Computing</i> , 2006, 27, 151-162.	2.3	29
18	Consensus in topologically interacting swarms under communication constraints and time-delays. <i>Nonlinear Dynamics</i> , 2018, 93, 1287-1300.	5.2	27

#	ARTICLE	IF	CITATIONS
19	Spatial super-spreaders and super-susceptibles in human movement networks. <i>Scientific Reports</i> , 2020, 10, 18642.	3.3	23
20	Computational performance of a parallelized three-dimensional high-order spectral element toolbox. <i>Computers and Fluids</i> , 2011, 44, 1-8.	2.5	22
21	Collisions of three-dimensional bipolar optical solitons in an array of carbon nanotubes. <i>Physical Review A</i> , 2016, 94, .	2.5	22
22	Solution of moving-boundary problems by the spectral element method. <i>Applied Numerical Mathematics</i> , 2008, 58, 968-984.	2.1	20
23	Unsteady transitional swirling flow in the presence of a moving free surface. <i>Physics of Fluids</i> , 2009, 21, .	4.0	20
24	On the Challenges and Potential of Using Barometric Sensors to Track Human Activity. <i>Sensors</i> , 2020, 20, 6786.	3.8	20
25	Design, Modeling, and Experimentation of a Bio-Inspired Miniature Climbing Robot With Bilayer Dry Adhesives. <i>Journal of Mechanisms and Robotics</i> , 2019, 11, .	2.2	19
26	Interplay between signaling network design and swarm dynamics. <i>Network Science</i> , 2016, 4, 244-265.	1.0	18
27	Two-dimensional extremely short electromagnetic pulses in a Bragg medium with carbon nanotubes. <i>European Physical Journal D</i> , 2015, 69, 1.	1.3	17
28	Transition from simple to complex contagion in collective decision-making. <i>Nature Communications</i> , 2022, 13, 1442.	12.8	17
29	Balancing Collective Exploration and Exploitation in Multi-Agent and Multi-Robot Systems: A Review. <i>Frontiers in Robotics and AI</i> , 2021, 8, 771520.	3.2	16
30	Decentralized Multi-Floor Exploration by a Swarm of Miniature Robots Teaming with Wall-Climbing Units. , 2019, , .		15
31	Interaction of a two-dimensional electromagnetic breather with an electron inhomogeneity in an array of carbon nanotubes. <i>Journal of Applied Physics</i> , 2014, 115, 203109.	2.5	14
32	Interaction of a two-dimensional electromagnetic pulse with an electron inhomogeneity in an array of carbon nanotubes in the presence of field inhomogeneity. <i>European Physical Journal D</i> , 2015, 69, 1.	1.3	14
33	Physical limits on cellular directional mechanosensing. <i>Physical Review E</i> , 2013, 87, 052716.	2.1	13
34	Three-dimensional light bullets in a Bragg medium with carbon nanotubes. <i>Applied Physics B: Lasers and Optics</i> , 2017, 123, 1.	2.2	13
35	Gradual Collective Upgrade of a Swarm of Autonomous Buoys for Dynamic Ocean Monitoring. , 2018, , .		13
36	Data assimilation method to de-noise and de-filter particle image velocimetry data. <i>Journal of Fluid Mechanics</i> , 2019, 877, 196-213.	3.4	13

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37	Multi-Agent Reinforcement Learning for Dynamic Ocean Monitoring by a Swarm of Buoys. , 2020, , .		13
38	Are the different layers of a social network conveying the same information?. EPJ Data Science, 2018, 7, .	2.8	12
39	Experience Replay Using Transition Sequences. Frontiers in Neurorobotics, 2018, 12, 32.	2.8	12
40	Hydrodynamic object identification with artificial neural models. Scientific Reports, 2019, 9, 11242.	3.3	12
41	Mesh Update Techniques for Free-Surface Flow Solvers Using Spectral Element Method. Journal of Scientific Computing, 2006, 27, 137-149.	2.3	11
42	Computational Fluid Dynamics for Architectural Design. Architectural Design, 2013, 83, 118-123.	0.1	11
43	Influence of multi-level impurities on the dynamics of ultrashort electromagnetic pulses in carbon nanotubes. Europhysics Letters, 2014, 106, 37005.	2.0	11
44	Propagation of three-dimensional bipolar ultrashort electromagnetic pulses in an inhomogeneous array of carbon nanotubes. Physical Review A, 2018, 97, .	2.5	11
45	PROPAGATION OF LASER BEAMS IN AN ARRAY OF SEMICONDUCTOR CARBON NANOTUBES. Modern Physics Letters B, 2013, 27, 1350045.	1.9	10
46	Stabilization of ultrashort pulses by external pumping in an array of carbon nanotubes subject to piezoelectric effects. Journal of Applied Physics, 2019, 126, .	2.5	10
47	Growth mechanisms of perturbations in boundary layers over a compliant wall. Physical Review Fluids, 2018, 3, .	2.5	10
48	Heterogeneous Swarms for Maritime Dynamic Target Search and Tracking. , 2020, , .		10
49	Asymptotic dynamics of three-dimensional bipolar ultrashort electromagnetic pulses in an array of semiconductor carbon nanotubes. Optics Express, 2019, 27, 27592.	3.4	10
50	Hydrodynamics of cell-cell mechanical signaling in the initial stages of aggregation. Physical Review E, 2010, 81, 041920.	2.1	9
51	Design and Analysis of A Miniature Two-Wheg Climbing Robot with Robust Internal and External Transitioning Capabilities. , 2019, , .		9
52	Transitional cylindrical swirling flow in presence of a flat free surface. Computers and Fluids, 2009, 38, 1651-1673.	2.5	8
53	Interplay between motility and cell-substratum adhesion in amoeboid cells. Biomicrofluidics, 2015, 9, 054112.	2.4	8
54	Development of a Miniature Robot for Multi-robot Occupancy Grid Mapping. , 2018, , .		8

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55	Persistent Cellular Motion Control and Trapping Using Mechanotactic Signaling. PLoS ONE, 2014, 9, e105406.	2.5	8
56	On the electronic spectrum in curved graphene nanoribbons. JETP Letters, 2013, 97, 400-403.	1.4	7
57	Three-dimensional ultrashort optical Airy beams in an inhomogeneous medium with carbon nanotubes. Physics Letters, Section A: General, Atomic and Solid State Physics, 2017, 381, 931-934.	2.1	7
58	ORION-II: A Miniature Climbing Robot with Bilayer Compliant Tape for Autonomous Intelligent Surveillance and Reconnaissance. , 2018, , .		7
59	A Bio-Inspired Miniature Climbing Robot With Bilayer Dry Adhesives: Design, Modeling, and Experimentation. , 2018, , .		7
60	Peculiarities of the propagation of multidimensional extremely short optical pulses in germanene. Physics Letters, Section A: General, Atomic and Solid State Physics, 2016, 380, 3117-3120.	2.1	6
61	A space-time integral minimisation method for the reconstruction of velocity fields from measured scalar fields. Journal of Fluid Mechanics, 2018, 854, 348-366.	3.4	6
62	Tracking Multiple Fast Targets With Swarms: Interplay Between Social Interaction and Agent Memory. , 2021, , .		6
63	Tuning Networks for Prosocial Behavior: From Senseless Swarms to Smart Mobs [Commentary]. IEEE Technology and Society Magazine, 2019, 38, 17-19.	0.8	5
64	Robust Stabilization of a Class of Nonlinear Systems via Aperiodic Sensing and Actuation. IEEE Access, 2020, 8, 157403-157417.	4.2	5
65	Viscoelastic laminar drag bounds in pipe flow. Physics of Fluids, 2020, 32, 031702.	4.0	5
66	External light control of three-dimensional ultrashort far-infrared pulses in an inhomogeneous array of carbon nanotubes. Physical Review B, 2021, 103, .	3.2	5
67	Propagation of extremely short pulses in a graphene-boron nitride bilayer. Physics Letters, Section A: General, Atomic and Solid State Physics, 2013, 377, 564-566.	2.1	4
68	Opto-acoustic effects in an array of carbon nanotubes. Journal of Applied Physics, 2016, 120, 134307.	2.5	4
69	Randomized Constraints Consensus for Distributed Robust Linear Programming * * This work is supported by the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme, grant agreement No 638992 - OPT4SMART, (GN) and by a grant from the Singapore National Research Foundation (NRF) under the ASPIRE project, grant No NCR-NCR001-040 (MC&amp;RB)... IFAC PapersOnLine, 2017, 50, 1973-1978.	0.9	4
70	Tail Design of A Miniature Two-Wheg Climbing Robot for External Transitioning. Mechanisms and Machine Science, 2019, , 2139-2148.	0.5	4
71	Randomized Constraints Consensus for Distributed Robust Mixed-Integer Programming. IEEE Transactions on Control of Network Systems, 2021, 8, 295-306.	3.7	4
72	A Computational Approach to Collective Behaviors. SpringerBriefs in Complexity, 2016, , 95-104.	0.1	4

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73	Tunneling characteristics of a contact between a superlattice and non-Fermi liquid using the AdS/CFT correspondence. <i>Modern Physics Letters B</i> , 2014, 28, 1450170.	1.9	3
74	A Biologically Inspired Approach to Collective Behaviors. <i>SpringerBriefs in Complexity</i> , 2016, , 5-15.	0.1	3
75	A Framework for the Identification of Human Vertical Displacement Activity Based on Multi-Sensor Data. <i>IEEE Sensors Journal</i> , 2022, 22, 8011-8029.	4.7	3
76	Beyond Bio-Inspired Robotics: How Multi-Robot Systems Can Support Research on Collective Animal Behavior. <i>Frontiers in Robotics and AI</i> , 0, 9, .	3.2	3
77	Time-scale joint representation of DNS and LES numerical data. <i>Computers and Fluids</i> , 2011, 43, 38-45.	2.5	2
78	Study of the indirect exchange interaction in a strained graphene nanoribbon. <i>Physica B: Condensed Matter</i> , 2013, 419, 62-65.	2.7	2
79	Few-cycle optical pulses in a thin film of a topological insulator. <i>Optics Communications</i> , 2014, 329, 151-153.	2.1	2
80	A randomized distributed ellipsoid algorithm for uncertain feasibility problems. , 2017, , .		2
81	Two-dimensional electroacoustic waves in silicene. <i>Applied Physics B: Lasers and Optics</i> , 2018, 124, 1.	2.2	2
82	Robust Stabilization of Resource Limited Networked Control Systems Under Denial-of-Service Attack. , 2019, , .		2
83	Interplay between success and patterns of human collaboration: case study of a Thai Research Institute. <i>Scientific Reports</i> , 2021, 11, 318.	3.3	2
84	A Sequential Algorithm for Sampled Mixed-integer Optimization Problems. <i>IFAC-PapersOnLine</i> , 2020, 53, 6749-6755.	0.9	2
85	Complexity science for urban solutions. , 2022, , 39-58.		2
86	THE HALL CONDUCTIVITY OF A DOPED GRAPHENE IN A QUANTIZING MAGNETIC FIELD. <i>Modern Physics Letters B</i> , 2012, 26, 1250188.	1.9	1
87	Zitterbewegung near a Schwarzschild-type black hole. <i>Modern Physics Letters A</i> , 2016, 31, 1650168.	1.2	1
88	Influence of the order parameter on the dynamics of ultrashort pulses in an environment with carbon nanotubes. <i>Journal of Applied Physics</i> , 2017, 121, 084301.	2.5	1
89	Nonequilibrium dielectric noise in solids in the presence of modulation of electrical permittivity and spectral symmetry breaking under feedback. <i>New Journal of Physics</i> , 2017, 19, 113050.	2.9	1
90	A Decentralized Mobile Computing Network for Multi-Robot Systems Operations. , 2018, , .		1

#	ARTICLE	IF	CITATIONS
91	Design innovation of mesoscale robotic swarms: applications to cooperative urban sensing and mapping. <i>Frontiers of Information Technology and Electronic Engineering</i> , 2019, 20, 1618-1631.	2.6	1
92	Tuning the clustering coefficient of generalized circulant networks. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2021, 578, 126088.	2.6	1
93	Computational Performance of a Parallelized Three-Dimensional High-Order Spectral Element Toolbox. <i>Lecture Notes in Computer Science</i> , 2009, , 323-329.	1.3	1
94	Grid Filter Modeling for Large-Eddy Simulation. <i>Notes on Numerical Fluid Mechanics and Multidisciplinary Design</i> , 2010, , 159-165.	0.3	1
95	Outlook: Can Swarms Be Designed?. <i>SpringerBriefs in Complexity</i> , 2016, , 105-106.	0.1	1
96	Integrated 2D Design in the Curriculum: Effectiveness of Early Cross-Subject Engineering Challenges. , 0, , .		1
97	Grid filter models for large-eddy simulation. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2007, 7, 1101203-1101204.	0.2	0
98	Directional Mechanosensing of Amoeboid Cells. <i>Biophysical Journal</i> , 2014, 106, 176a-177a.	0.5	0
99	Physical Limits on Directional Mechanosensing of Amoeboid Crawling Cells. <i>Biophysical Journal</i> , 2014, 106, 176a.	0.5	0
100	Study of the indirect interaction in a non-Fermi liquid within the AdS/CFT correspondence framework. <i>Modern Physics Letters B</i> , 2015, 29, 1550081.	1.9	0
101	Three-dimensional extremely-short optical pulses in carbon nanotube arrays in the presence of an external magnetic field. <i>Modern Physics Letters B</i> , 2016, 30, 1650405.	1.9	0
102	Collision of 3D bipolar light pulses in an array of carbon nanotubes. , 2016, , .		0
103	Phonon Spectrum and Vibrational Thermodynamic Characteristics of Graphene Nanolms. , 2016, , 307-322.		0
104	A Physical Approach to Swarming. <i>SpringerBriefs in Complexity</i> , 2016, , 17-43.	0.1	0
105	A Physics-Based Attack Detection Technique in Cyber-Physical Systems: A Model Predictive Control Co-Design Approach. , 2019, , .		0
106	Entropy changes in crystalline material under phase transition and symmetry breaking. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2021, 588, 126525.	2.6	0
107	Wavelet Analysis of the Turbulent LES Data of the Lid-Driven Cavity Flow. <i>Notes on Numerical Fluid Mechanics and Multidisciplinary Design</i> , 2010, , 87-94.	0.3	0
108	A Network-Theoretic Approach to Collective Dynamics. <i>SpringerBriefs in Complexity</i> , 2016, , 45-74.	0.1	0

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109	Complexity and Swarming Systems. SpringerBriefs in Complexity, 2016, , 1-3.	0.1	0
110	Excess of social activity reduces the responsiveness of swarms. International Journal of Design and Nature and Ecodynamics, 2016, 11, 654-662.	0.5	0
111	EXCESS OF SOCIAL ACTIVITY REDUCES THE RESPONSIVENESS OF SWARMS. WIT Transactions on State-of-the-art in Science and Engineering, 2017, , 172-180.	0.0	0
112	Probabilistic Modelling of Demographic Changes in Singapore's Neighbourhoods. IOP Conference Series: Materials Science and Engineering, 2021, 1203, 032032.	0.6	0
113	Robust Stabilization of a Class of Networked Nonlinear Systems via Parsimonious Communication and Actuation. , 2020, , .		0
114	â€˜Data dregsâ€™ and its implications for AI ethics: Revelations from the pandemic. AI and Ethics, 2022, , 1-3.	6.8	0