Sergio Alonso MuÃ±oz

List of Publications by Year
in descending order

73 papers	1,516 citations	304743 22 h-index	345221 36 g-index
74 all docs	74 docs citations	74 times ranked	1086 citing authors

#	Article	IF	Citations
1	Taming Winfree Turbulence of Scroll Waves in Excitable Media. Science, 2003, 299, 1722-1725.	12.6	227
2	Regular Wave Propagation Out of Noise in Chemical Active Media. Physical Review Letters, 2001, 87, 078302.	7.8	91
3	Brownian Motion of Spiral Waves Driven by Spatiotemporal Structured Noise. Physical Review Letters, 2000, 84, 2734-2737.	7.8	73
4	Reentry Near the Percolation Threshold in a Heterogeneous Discrete Model for Cardiac Tissue. Physical Review Letters, 2013, 110, 158101.	7.8	68
5	Intracellular Mechanochemical Waves in an Active Poroelastic Model. Physical Review Letters, 2013, 110, 138102.	7.8	64
6	Nonlinear physics of electrical wave propagation in the heart: a review. Reports on Progress in Physics, 2016, 79, 096601.	20.1	58
7	Reentry and Ectopic Pacemakers Emerge in a Three-Dimensional Model for a Slab of Cardiac Tissue with Diffuse Microfibrosis near the Percolation Threshold. PLoS ONE, 2016, 11, e0166972.	2.5	49
8	Negative Filament Tension at High Excitability in a Model of Cardiac Tissue. Physical Review Letters, 2008, 100, 218101.	7.8	46
9	Expanding scroll rings and negative tension turbulence in a model of excitable media. Physical Review E, 2004, 70, 056201.	2.1	41
10	How cortical waves drive fission of motile cells. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 6330-6338.	7.1	40
11	Modeling random crawling, membrane deformation and intracellular polarity of motile amoeboid cells. PLoS ONE, 2018, 13, e0201977.	2.5	36
12	Experimental Evidence of Localized Oscillations in the Photosensitive Chlorine Dioxide-Iodine-Malonic Acid Reaction. Physical Review Letters, 2006, 97, 178301.	7.8	35
13	Negative filament tension in the Luo-Rudy model of cardiac tissue. Chaos, 2007, 17, 015102.	2.5	32
14	Ectopic beats arise from micro-reentries near infarct regions in simulations of a patient-specific heart model. Scientific Reports, 2018, 8, 16392.	3.3	32
15	Effective Medium Theory for Reaction Rates and Diffusion Coefficients of Heterogeneous Systems. Physical Review Letters, 2009, 102, 238302.	7.8	29
16	Negative-Tension Instability of Scroll Waves and Winfree Turbulence in the Oregonator Model. Journal of Physical Chemistry A, 2006, 110, 12063-12071.	2.5	26
17	Transmission of Severe Acute Respiratory Syndrome Coronavirus 2 Infection Among Children in Summer Schools Applying Stringent Control Measures in Barcelona, Spain. Clinical Infectious Diseases, 2022, 74, 66-73.	5.8	26
18	Robust estimation of diagnostic rate and real incidence of COVID-19 for European policymakers. PLoS ONE, 2021, 16, e0243701.	2.5	25

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19	Negative Tension of Scroll Wave Filaments and Turbulence in Three-Dimensional Excitable Media and Application in Cardiac Dynamics. Bulletin of Mathematical Biology, 2013, 75, 1351-1376.	1.9	24
20	Periodic forcing of scroll rings and control of Winfree turbulence in excitable media. Chaos, 2006, 16, 023124.	2.5	23
21	Phase separation and bistability in a three-dimensional model for protein domain formation at biomembranes. Physical Biology, 2010, 7, 046012.	1.8	23
22	Simulation of Ectopic Pacemakers in the Heart: Multiple Ectopic Beats Generated by Reentry inside Fibrotic Regions. BioMed Research International, 2015, 2015, 1-18.	1.9	23
23	Empirical model for short-time prediction of COVID-19 spreading. PLoS Computational Biology, 2020, 16, e1008431.	3.2	23
24	Excitability transitions and wave dynamics under spatiotemporal structured noise. Physical Review E, 2002, 65, 066107.	2.1	22
25	Age-dependency of the Propagation Rate of Coronavirus Disease 2019 Inside School Bubble Groups in Catalonia, Spain. Pediatric Infectious Disease Journal, 2021, 40, 955-961.	2.0	22
26	Oscillations and uniaxial mechanochemical waves in a model of an active poroelastic medium: Application to deformation patterns in protoplasmic droplets of Physarum polycephalum. Physica D: Nonlinear Phenomena, 2016, 318-319, 58-69.	2.8	21
27	Mechanochemical pattern formation in simple models of active viscoelastic fluids and solids. Journal Physics D: Applied Physics, 2017, 50, 434004.	2.8	19
28	Dynamics of reaction-diffusion patterns controlled by asymmetric nonlocal coupling as a limiting case of differential advection. Physical Review E, 2014, 89, 052909.	2.1	18
29	Modeling cell crawling strategies with a bistable model: From amoeboid to fan-shaped cell motion. Physica D: Nonlinear Phenomena, 2020, 412, 132591.	2.8	17
30	Complex wave patterns in an effective reactionâ€“diffusion model for chemical reactions in microemulsions. Journal of Chemical Physics, 2011, 134, 094117.	3.0	16
31	Suppression of scroll wave turbulence by noise. Physical Review E, 2004, 70, 067201.	2.1	15
32	Effects of external global noise on the catalytic CO oxidation on Pt(110). Journal of Chemical Physics, 2009, 130, 084704.	3.0	15
33	Surfactant-induced gradients in the three-dimensional Belousov-Zhabotinsky reaction. Physical Review E, 2011, 84, 056210.	2.1	15
34	Killing Many Birds With Two Stones: Hypoxia and Fibrosis Can Generate Ectopic Beats in a Human Ventricular Model. Frontiers in Physiology, 2018, 9, 764.	2.8	15
35	Effective medium approach for heterogeneous reaction-diffusion media. Journal of Chemical Physics, 2009, 131, 214102.	3.0	14
36	Towards active microfluidics: Interface turbulence in thin liquid films with floating molecular machines. Physical Review E, 2009, 79, 061906.	2.1	13

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37	Effects of reduced discrete coupling on filament tension in excitable media. Chaos, 2011, 21, 013118.	2.5	13
38	Wave propagation in heterogeneous bistable and excitable media. European Physical Journal: Special Topics, 2010, 187, 31-40.	2.6	12
39	Oscillations in the Lateral Pressure of Lipid Monolayers Induced by Nonlinear Chemical Dynamics of the Second Messengers MARCKS andÂProtein Kinase C. Biophysical Journal, 2011, 100, 939-947.	0.5	12
40	Twists of Opposite Handedness on a Scroll Wave. Physical Review Letters, 2013, 110, 234102.	7.8	12
41	Control of electrical turbulence by periodic excitation of cardiac tissue. Chaos, 2017, 27, 113110.	2.5	11
42	Noise-induced Brownian motion of spiral waves. Physical Review E, 2001, 63, 046205.	2.1	9
43	Diffusivity Estimation for Activatorâ€“Inhibitor Models: Theory and Application to Intracellular Dynamics of the Actin Cytoskeleton. Journal of Nonlinear Science, 2021, 31, 1.	2.1	9
44	Individual prevention and containment measures in schools in Catalonia, Spain, and community transmission of SARS-CoV-2 after school re-opening. PLoS ONE, 2022, 17, e0263741.	2.5	9
45	Spatio-temporal dynamics induced by competing instabilities in two asymmetrically coupled nonlinear evolution equations. Chaos, 2014, 24, 043142.	2.5	8
46	Modelling the dynamics of tuberculosis lesions in a virtual lung: Role of the bronchial tree in endogenous reinfection. PLoS Computational Biology, 2020, 16, e1007772.	3.2	8
47	Risk Diagrams Based on Primary Care Electronic Medical Records and Linked Real-Time PCR Data to Monitor Local COVID-19 Outbreaks During the Summer 2020: A Prospective Study Including 7,671,862 People in Catalonia. Frontiers in Public Health, 2021, 9, 693956.	2.7	8
48	Differential susceptibility to noise of mixed Turing and Hopf modes in a photosensitive chemical medium. Europhysics Letters, 2008, 81, 30006.	2.0	6
49	Modeling domain formation of MARCKS and protein kinase C at cellular membranes. EPJ Nonlinear Biomedical Physics, 2014, 2, .	0.8	6
50	Can systems immunology lead tuberculosis eradication?. Current Opinion in Systems Biology, 2018, 12, 53-60.	2.6	6
51	Monitoring and Analysis of COVID-19 Pandemic: The Need for an Empirical Approach. Frontiers in Public Health, 2021, 9, 633123.	2.7	6
52	Noise-reversed stability of Turing patterns versus Hopf oscillations near codimension-two conditions. Physical Review E, 2009, 80, 035203.	2.1	5
53	Reentry produced by small-scale heterogeneities in a discrete model of cardiac tissue. Journal of Physics: Conference Series, 2016, 727, 012002.	0.4	4
54	From Single to Collective Motion of Social Amoebae: A Computational Study of Interacting Cells. Frontiers in Physics, 2022, 9, .	2.1	4

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55	Traveling waves and global oscillations triggered by attractive molecular interactions in an excitable system. Physical Review E, 2014, 90, 052913.	2.1	3
56	Development of a Computational Model of Abscess Formation. Frontiers in Microbiology, 2018, 9, 1355.	3.5	3
57	A reaction-diffusion model to understand granulomas formation inside secondary lobule during tuberculosis infection. PLoS ONE, 2020, 15, e0239289.	2.5	3
58	Self-organization processes at active interfaces. European Physical Journal: Special Topics, 2010, 191, 131-145.	2.6	2
59	Discretization-dependent model for weakly connected excitable media. Physical Review E, 2018, 97, 032214.	2.1	2
60	Combining Polynomial Chaos Expansions and Genetic Algorithm for the Coupling of Electrophysiological Models. Lecture Notes in Computer Science, 2019, , 116-129.	1.3	2
61	Unravelling the Role of the Mandatory Use of Face Covering Masks for the Control of SARS-CoV-2 in Schools: A Quasi-Experimental Study Nested in a Population-Based Cohort in Catalonia (Spain). SSRN Electronic Journal, 0, , .	0.4	2
62	WAVE PATTERN DYNAMICS IN FLUCTUATING MEDIA. International Journal of Modern Physics C, 2002, 13, 1243-1252.	1.7	1
63	Scroll wave instability controlled by external fluctuations. Physica A: Statistical Mechanics and Its Applications, 2005, 351, 159-166.	2.6	1
64	Simulations of Heart Function. BioMed Research International, 2015, 2015, 1-3.	1.9	1
65	Modelling the Electrical Activity of the Heart. Series in Bioengineering, 2019, , 211-229.	0.6	1
66	Reactive Interstitial and Reparative Fibrosis as Substrates for Cardiac Ectopic Pacemakers and Reentries. Lecture Notes in Computer Science, 2016, , 346-357.	1.3	1
67	Unravelling the Role of the Mandatory Use of Face Covering Masks for the Control of SARS-CoV-2 in Schools: A Quasi-Experimental Study Nested in a Population-Based Cohort in Catalonia (Spain). SSRN Electronic Journal, 0, , .	0.4	1
68	Wave Propagation in Excitable Media Through Randomly Distributed Heterogeneities: Simulations and Comparison to the Effective Medium Theory. ESAIM: Proceedings and Surveys, 2013, 39, 7-14.	0.4	0
69	Pattern Formation at Cellular Membranes by Phosphorylation and Dephosphorylation of Proteins. SEMA SIMAI Springer Series, 2016, , 63-82.	0.7	0
70	Onset of Mechanochemical Pattern Formation in Poroviscoelastic Models of Active Cytoplasm. SEMA SIMAI Springer Series, 2019, , 87-106.	0.7	0
71	Dynamics of Physarum Microdroplets â€“ an Example for Mechanochemical Pattern Formation in Active Biological Matter. , 2016, , .		0
72	An ensemble of parameters from a robust Markov-based model reproduces L-type calcium currents from different human cardiac myocytes. PLoS ONE, 2022, 17, e0266233.	2.5	0

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73	Mass-Conservation Increases Robustness in Stochastic Reaction-Diffusion Models of Cell Crawling. Frontiers in Physics, 2022, 10, .	2.1	0