Martin Falcke

List of Publications by Year
in descending order

116 papers	4,234 citations	101543 36 h-index	128289 60 g-index
126 all docs	126 docs citations	126 times ranked	2232 citing authors

#	Article	IF	Citations
1	On the relation between input and output distributions of scRNA-seq experiments. Bioinformatics, 2022, 38, 1336-1343.	4.1	1
2	Receptor-associated independent cAMP nanodomains mediate spatiotemporal specificity of GPCR signaling. Cell, 2022, 185, 1130-1142.e11.	28.9	85
3	On the adhesionâ€“velocity relation and length adaptation of motile cells on stepped fibronectin lanes. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	17
4	Multiscale Modeling of Dyadic Structure-Function Relation in Ventricular Cardiac Myocytes. Biophysical Journal, 2021, 120, 280a.	0.5	0
5	On the Adhesion-Velocity Relation and Length Adaption of Motile Cells on Stepped Fibronectin Lanes. Biophysical Journal, 2021, 120, 65a.	0.5	0
6	Stochastic Reaction-Diffusion Modeling of Calcium Dynamics in 3D-Dendritic Spines of Purkinje Cells. Biophysical Journal, 2021, 120, 282a.	0.5	0
7	Stochastic reaction-diffusion modeling of calcium dynamics in 3D dendritic spines of Purkinje cells. Biophysical Journal, 2021, 120, 2112-2123.	0.5	6
8	Models of stochastic $$hbox {Ca}^{2+}$$ spiking. European Physical Journal: Special Topics, 2021, 230, 2911-2928.	2.6	9
9	Computational toolbox for ultrastructural quantitative analysis of filament networks in cryo-ET data. Journal of Structural Biology, 2021, 213, 107808.	2.8	22
10	Optical Mapping of cAMP Signaling at the Nanometer Scale. Cell, 2020, 182, 1519-1530.e17.	28.9	125
11	Proteomic Analysis Reveals Upregulation of ACE2 (Angiotensin-Converting Enzyme 2), the Putative SARS-CoV-2 Receptor in Pressureâ€“but Not Volume-Overloaded Human Hearts. Hypertension, 2020, 76, e41-e43.	2.7	6
12	Phase Separation of a PKA Regulatory Subunit Controls cAMP Compartmentation and Oncogenic Signaling. Cell, 2020, 182, 1531-1544.e15.	28.9	177
13	Lamellipodin tunes cell migration by stabilizing protrusions and promoting adhesion formation. Journal of Cell Science, 2020, 133, .	2.0	28
14	A Statistical View on Calcium Oscillations. Advances in Experimental Medicine and Biology, 2020, 1131, 799-826.	1.6	12
15	The transcriptome dynamics of single cells during the cell cycle. Molecular Systems Biology, 2020, 16, e9946.	7.2	35
16	Multiscale Modeling of Dyadic Structure-Function Relation in Ventricular Cardiac Myocytes. Biophysical Journal, 2019, 117, 2409-2419.	0.5	8
17	Longâ€term effects of Na⁺/Ca²⁺ exchanger inhibition with ORMâ€11035 improves cardiac function and remodelling without lowering blood pressure in a model of heart failure with preserved ejection fraction. European Journal of Heart Failure, 2019, 21, 1543-1552.	7.1	20
18	On the relation between filament density, force generation, and protrusion rate in mesenchymal cell motility. Molecular Biology of the Cell, 2018, 29, 2674-2686.	2.1	24

#	ARTICLE	IF	CITATIONS
19	On the phase space structure of IP3induced Ca2+signalling and concepts for predictive modeling. Chaos, 2018, 28, 045115.	2.5	9
20	The stretch to stray on time: Resonant length of random walks in a transient. Chaos, 2018, 28, 053117.	2.5	7
21	Multiscale Modeling and Numerical Simulation of Calcium Cycling in Cardiac Myocytes. Multiscale Modeling and Simulation, 2018, 16, 1115-1145.	1.6	2
22	Mapping Interpuff Interval Distribution to the Properties of Inositol Trisphosphate Receptors. Biophysical Journal, 2017, 112, 2138-2146.	0.5	8
23	Excitability in the p53 network mediates robust signaling with tunable activation thresholds in single cells. Scientific Reports, 2017, 7, 46571.	3.3	37
24	Some Background Physiology. Interdisciplinary Applied Mathematics, 2016, , 3-27.	0.3	0
25	Hierarchical and Stochastic Modelling. Interdisciplinary Applied Mathematics, 2016, , 163-205.	0.3	1
26	Nonlinear Dynamics of Calcium. Interdisciplinary Applied Mathematics, 2016, , 207-242.	0.3	1
27	Nonexcitable Cells. Interdisciplinary Applied Mathematics, 2016, , 245-294.	0.3	0
28	Neurons and Other Excitable Cells. Interdisciplinary Applied Mathematics, 2016, , 337-385.	0.3	2
29	Concentration profiles of actin-binding molecules in lamellipodia. Physica D: Nonlinear Phenomena, 2016, 318-319, 50-57.	2.8	6
30	Models of Calcium Signalling. Interdisciplinary Applied Mathematics, 2016, , .	0.3	90
31	The Calcium Toolbox. Interdisciplinary Applied Mathematics, 2016, , 29-96.	0.3	2
32	Basic Modelling Principles: Deterministic Models. Interdisciplinary Applied Mathematics, 2016, , 97-161.	0.3	2
33	Concentration Profiles of Actin-Binding Molecules in Lamellipodia with Retrograde Flow. Biophysical Journal, 2015, 108, 139a.	0.5	0
34	A multiscale computational model of spatially resolved calcium cycling in cardiac myocytes: from detailed cleft dynamics to the whole cell concentration profiles. Frontiers in Physiology, 2015, 6, 255.	2.8	15
35	Mechanical properties of branched actin filaments. Physical Biology, 2015, 12, 046007.	1.8	15
36	Formation of Transient Lamellipodia. PLoS ONE, 2014, 9, e87638.	2.5	31

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37	Reliable Encoding of Stimulus Intensities Within Random Sequences of Intracellular Ca ²⁺ Spikes. Science Signaling, 2014, 7, ra59.	3.6	101
38	Reliable Encoding of Stimulus Intensities by Random Sequences of Ca2+ Spikes. Biophysical Journal, 2014, 106, 241a.	0.5	0
39	Polymerization, bending, tension: What happens at the leading edge of motile cells?. European Physical Journal: Special Topics, 2014, 223, 1353-1372.	2.6	7
40	Reply to comment on â€œPolymerization, bending, tension: What happens at the leading edge of motile cells?â€•by Falko Ziebert and Igor S. Aranson. European Physical Journal: Special Topics, 2014, 223, 1433-1435.	2.6	1
41	A Stochastic Model of Calcium Puffs Based on Single-Channel Data. Biophysical Journal, 2013, 105, 1133-1142.	0.5	52
42	On the existence and strength of stable membrane protrusions. New Journal of Physics, 2013, 15, 015021.	2.9	5
43	Fundamental properties of Ca2+ signals. Biochimica Et Biophysica Acta - General Subjects, 2012, 1820, 1185-1194.	2.4	72
44	Actin Filament Elasticity and Retrograde Flow Shape the Force-Velocity Relation of Motile Cells. Biophysical Journal, 2012, 102, 287-295.	0.5	69
45	Membrane waves driven by forces from actin filaments. New Journal of Physics, 2012, 14, 115002.	2.9	16
46	Hierarchic Stochastic Modelling Applied to Intracellular Ca2+ Signals. PLoS ONE, 2012, 7, e51178.	2.5	17
47	Adaptive space and time numerical simulation of reactionâ€“diffusion models for intracellular calcium dynamics. Applied Mathematics and Computation, 2012, 218, 10194-10210.	2.2	10
48	How does the ryanodine receptor in the ventricular myocyte wake up: by a single or by multiple open L-type Ca2+ channels?. European Biophysics Journal, 2012, 41, 27-39.	2.2	11
49	Modeling Morphodynamic Phenotypes and Dynamic Regimes of Cell Motion. Advances in Experimental Medicine and Biology, 2012, 736, 337-358.	1.6	7
50	Metabolic Synchronization by Traveling Waves in Yeast Cell Layers. Biophysical Journal, 2011, 100, 809-813.	0.5	22
51	Timescales of IP3-Evoked Ca2+ Spikes Emerge from Ca2+ Puffs Only at the Cellular Level. Biophysical Journal, 2011, 101, 2638-2644.	0.5	47
52	Rahman et al. reply. Nature, 2011, 478, E2-E3.	27.8	3
53	Derivation of Ca ²⁺ signals from puff properties reveals that pathway function is robust against cell variability but sensitive for control. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 427-432.	7.1	54
54	Actin-based propulsion of spatially extended objects. New Journal of Physics, 2011, 13, 053040.	2.9	9

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55	EFFICIENT AND DETAILED MODEL OF THE LOCAL Ca2+ RELEASE UNIT IN THE VENTRICULAR CARDIAC MYOCYTE. , 2010, , .		3
56	Statistical analysis of calcium oscillations. European Physical Journal: Special Topics, 2010, 187, 231-240.	2.6	15
57	Filament capping and nucleation in actin-based motility. European Physical Journal: Special Topics, 2010, 191, 147-158.	2.6	5
58	Calcium Signals Driven by Single Channel Noise. PLoS Computational Biology, 2010, 6, e1000870.	3.2	89
59	Modeling of Protrusion Phenotypes Driven by the Actin-Membrane Interaction. Biophysical Journal, 2010, 98, 1571-1581.	0.5	55
60	Leading-edgeâ€"gel coupling in lamellipodium motion. Physical Review E, 2010, 82, 051925.	2.1	34
61	Efficient and detailed model of the local Ca2+ release unit in the ventricular cardiac myocyte. Genome Informatics, 2010, 22, 142-55.	0.4	4
62	Toward a predictive model of Ca2+ puffs. Chaos, 2009, 19, 037108.	2.5	26
63	From puffs to global Ca2+ signals: How molecular properties shape global signals. Chaos, 2009, 19, 037111.	2.5	51
64	Markov chain Monte Carlo fitting of single-channel data from inositol trisphosphate receptors. Journal of Theoretical Biology, 2009, 257, 460-474.	1.7	29
65	Clustering of InsP3 receptors by InsP3 retunes their regulation by InsP3 and Ca2+. Nature, 2009, 458, 655-659.	27.8	165
66	Waiting time distributions for clusters of receptors. Journal of Theoretical Biology, 2009, 259, 338-349.	1.7	15
67	A Kinetic Model of the Inositol Trisphosphate Receptor Based on Single-Channel Data. Biophysical Journal, 2009, 96, 4053-4062.	0.5	39
68	Modeling of the Modulation by Buffers of Ca2+ Release through Clusters of IP3 Receptors. Biophysical Journal, 2009, 97, 992-1002.	0.5	25
69	Introduction to Focus Issue: Intracellular Ca2+ Dynamicsâ€"A Change of Modeling Paradigm?. Chaos, 2009, 19, 037101.	2.5	11
70	Stochastic Hierarchical Systems: Excitable Dynamics. Journal of Biological Physics, 2008, 34, 521-538.	1.5	3
71	Adaptive numerical simulation of intracellular calcium dynamics using domain decomposition methods. Applied Numerical Mathematics, 2008, 58, 1658-1674.	2.1	11
72	Temperature and nitric oxide control spontaneous calcium transients in astrocytes. Cell Calcium, 2008, 43, 285-295.	2.4	37

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73	How Does Intracellular Ca2+ Oscillate: By Chance or by the Clock?. Biophysical Journal, 2008, 94, 2404-2411.	0.5	169
74	Velocity oscillations in actin-based motility. New Journal of Physics, 2008, 10, 033022.	2.9	33
75	Dynamic regimes and bifurcations in a model of actin-based motility. Physical Review E, 2008, 78, 031915.	2.1	24
76	THE ROLE OF IP₃R CLUSTERING IN Ca²⁺ SIGNALING. , 2008, , .		3
77	Announcement: Focus issue on â€œIntracellular Ca2+ Dynamicsâ€" A Change of Modeling Paradigm?â€. Chaos, 2008, 18, .	2.5	0
78	Parallel Numerical Solution of Intracellular Calcium Dynamics. Lecture Notes in Computational Science and Engineering, 2008, , 607-614.	0.3	1
79	Waiting time distributions for clusters of complex molecules. Europhysics Letters, 2007, 79, 38003.	2.0	17
80	Wave trains in an excitable FitzHugh-Nagumo model: Bistable dispersion relation and formation of isolas. Physical Review E, 2007, 75, 036202.	2.1	13
81	Non-Markovian approach to globally coupled excitable systems. Physical Review E, 2007, 76, 011118.	2.1	23
82	Reversible clustering under the influence of a periodically modulated binding rate. Physical Review E, 2007, 76, 010402.	2.1	9
83	Mechanism of intracellular Ca2+oscillations and interspike interval distributions. , 2007, , .		1
84	Hybrid Stochastic and Deterministic Simulations of Calcium Blips. Biophysical Journal, 2007, 93, 1847-1857.	0.5	98
85	Quasi-Steady Approximation for Ion Channel Currents. Biophysical Journal, 2007, 93, 2597-2608.	0.5	37
86	Adaptive numerical simulation of intracellular calcium dynamics. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 2010029-2010030.	0.2	0
87	Reaction Rate of Small Diffusing Molecules onÂaÂCylindrical Membrane. Journal of Statistical Physics, 2007, 129, 377-405.	1.2	30
88	STATISTICAL PROPERTIES AND INFORMATION CONTENT OF CALCIUM OSCILLATIONS. , 2007, , .		12
89	Statistical properties and information content of calcium oscillations. Genome Informatics, 2007, 18, 44-53.	0.4	14
90	Frequency of elemental events of intracellularCa2+dynamics. Physical Review E, 2006, 73, 061923.	2.1	35

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91	Models of the inositol trisphosphate receptor. Progress in Biophysics and Molecular Biology, 2005, 89, 207-245.	2.9	65
92	Reactive clusters on a membrane. Physical Biology, 2005, 2, 51-59.	1.8	11
93	Stability of Membrane Bound Reactions. Physical Review Letters, 2004, 93, 188103.	7.8	50
94	A comparison of three models of the inositol trisphosphate receptor. Progress in Biophysics and Molecular Biology, 2004, 85, 121-140.	2.9	37
95	Reading the patterns in living cells â€"the physics of ca2+signaling. Advances in Physics, 2004, 53, 255-440.	14.4	317
96	Release Currents of IP3 Receptor Channel Clusters and Concentration Profiles. Biophysical Journal, 2004, 86, 2660-2673.	0.5	111
97	Modeling the Dependence of the Period of Intracellular Ca2+ Waves on SERCA Expression. Biophysical Journal, 2003, 85, 1474-1481.	0.5	45
98	Buffers and Oscillations in Intracellular Ca2+ Dynamics. Biophysical Journal, 2003, 84, 28-41.	0.5	87
99	On the Role of Stochastic Channel Behavior in Intracellular Ca2+ Dynamics. Biophysical Journal, 2003, 84, 42-56.	0.5	174
100	Deterministic and stochastic models of intracellular Ca2Âwaves. New Journal of Physics, 2003, 5, 96-96.	2.9	42
101	Modeling observed chaotic oscillations in bursting neurons: the role of calcium dynamics and IP 3. Biological Cybernetics, 2000, 82, 517-527.	1.3	77
102	Discrete Stochastic Modeling of Calcium Channel Dynamics. Physical Review Letters, 2000, 84, 5664-5667.	7.8	77
103	Dispersion Gap and Localized Spiral Waves in a Model for IntracellularCa2+Dynamics. Physical Review Letters, 2000, 84, 4753-4756.	7.8	60
104	Stochastic spreading of intracellularCa2+release. Physical Review E, 2000, 62, 2636-2643.	2.1	108
105	Spiral breakup and defect dynamics in a model for intracellular Ca2+ dynamics. Physica D: Nonlinear Phenomena, 1999, 129, 236-252.	2.8	31
106	Impact of Mitochondrial Ca 2+ Cycling on Pattern Formation and Stability. Biophysical Journal, 1999, 77, 37-44.	0.5	78
107	Pattern Selection by Gene Expression inDictyostelium Discoideum. Physical Review Letters, 1998, 80, 3875-3878.	7.8	34
108	Traveling pulses in anisotropic oscillatory media with global coupling. Physical Review E, 1997, 56, 635-641.	2.1	15

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109	Quantification of transients using empirical orthogonal functions. Chaos, Solitons and Fractals, 1997, 8, 1911-1920.	5.1	3
110	Cluster formation, standing waves, and stripe patterns in oscillatory active media with local and global coupling. Physical Review E, 1995, 52, 763-771.	2.1	60
111	Chemical turbulence and standing waves in a surface reaction model: The influence of global coupling and wave instabilities. Chaos, 1994, 4, 499-508.	2.5	103
112	Pattern formation during the CO oxidation on Pt(110) surfaces under global coupling. Journal of Chemical Physics, 1994, 101, 6255-6263.	3.0	61
113	Influence of global coupling through the gas phase on the dynamics of CO oxidation on Pt(110). Physical Review E, 1994, 50, 1353-1359.	2.1	43
114	Traveling waves in the CO oxidation on Pt(110): Theory. Journal of Chemical Physics, 1992, 97, 4555-4563.	3.0	48
115	Reaction fronts and pulses in the CO oxidation on Pt: theoretical analysis. Surface Science, 1992, 269-270, 471-475.	1.9	20
116	Dispersion relation and spiral rotation in an excitable surface reaction. Physica A: Statistical Mechanics and Its Applications, 1992, 188, 78-88.	2.6	19