Anotida Madzvamuse

List of Publications by Year
in descending order

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70 papers	1,710 citations	331670 21 h-index	315739 38 g-index
78 all docs	78 docs citations	78 times ranked	1212 citing authors

#	Article	IF	Citations
1	Time-stepping schemes for moving grid finite elements applied to reactionâ€“diffusion systems on fixed and growing domains. Journal of Computational Physics, 2006, 214, 239-263.	3.8	98
2	A moving grid finite element method applied to a model biological pattern generator. Journal of Computational Physics, 2003, 190, 478-500.	3.8	96
3	Stability analysis of non-autonomous reaction-diffusion systems: the effects of growing domains. Journal of Mathematical Biology, 2010, 61, 133-164.	1.9	89
4	A sensor kinase controls turgor-driven plant infection by the rice blast fungus. Nature, 2019, 574, 423-427.	27.8	87
5	The surface finite element method for pattern formation on evolving biological surfaces. Journal of Mathematical Biology, 2011, 63, 1095-1119.	1.9	84
6	Cross-diffusion-driven instability for reaction-diffusion systems: analysis and simulations. Journal of Mathematical Biology, 2015, 70, 709-743.	1.9	76
7	Velocity-induced numerical solutions of reaction-diffusion systems on continuously growing domains. Journal of Computational Physics, 2007, 225, 100-119.	3.8	72
8	A Moving Grid Finite Element Method for the Simulation of Pattern Generation by Turing Models on Growing Domains. Journal of Scientific Computing, 2005, 24, 247-262.	2.3	65
9	Two Interlinked Bistable Switches Govern Mitotic Control in Mammalian Cells. Current Biology, 2018, 28, 3824-3832.e6.	3.9	62
10	Cell migration through three-dimensional confining pores: speed accelerations by deformation and recoil of the nucleus. Philosophical Transactions of the Royal Society B: Biological Sciences, 2019, 374, 20180225.	4.0	62
11	A model for colour pattern formation in the butterfly wing of Papilio dardanus. Proceedings of the Royal Society B: Biological Sciences, 2000, 267, 851-859.	2.6	57
12	Pigmentation pattern formation in butterflies: experiments and models. Comptes Rendus - Biologies, 2003, 326, 717-727.	0.2	56
13	A coupled bulk-surface model for cell polarisation. Journal of Theoretical Biology, 2019, 481, 119-135.	1.7	48
14	A Numerical Approach to the Study of Spatial Pattern Formation in the Ligaments of Arcoid Bivalves. Bulletin of Mathematical Biology, 2002, 64, 501-530.	1.9	41
15	A mechanochemical model of striae distensae. Mathematical Biosciences, 2012, 240, 141-147.	1.9	40
16	Stability analysis and simulations of coupled bulk-surface reactionâ€“diffusion systems. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20140546.	2.1	39
17	Optogenetic Tuning Reveals Rho Amplification-Dependent Dynamics of a Cell Contraction Signal Network. Cell Reports, 2020, 33, 108467.	6.4	31
18	Implicit–Explicit Timestepping with Finite Element Approximation of Reaction–Diffusion Systems on Evolving Domains. SIAM Journal on Numerical Analysis, 2013, 51, 2309-2330.	2.3	29

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19	A Hybrid Multiscale Model for Cancer Invasion of the Extracellular Matrix. Multiscale Modeling and Simulation, 2020, 18, 824-850.	1.6	26
20	The bulk-surface finite element method for reactionâ€“diffusion systems on stationary volumes. Finite Elements in Analysis and Design, 2016, 108, 9-21.	3.2	24
21	High Accuracy Benchmark Problems for Allen-Cahn and Cahn-Hilliard Dynamics. Communications in Computational Physics, 2019, 26, 947-972.	1.7	24
22	Global existence for semilinear reactionâ€“diffusion systems on evolving domains. Journal of Mathematical Biology, 2012, 64, 41-67.	1.9	23
23	Dynamics of Shadow System of a Singular Giererâ€“Meinhardt System on an Evolving Domain. Journal of Nonlinear Science, 2021, 31, 1.	2.1	23
24	Modeling parr-mark pattern formation during the early development of Amago trout. Physical Review E, 2011, 84, 041923.	2.1	22
25	Mathematical modelling and numerical simulations of actin dynamics in the eukaryotic cell. Journal of Mathematical Biology, 2013, 66, 547-593.	1.9	22
26	Exhibiting cross-diffusion-induced patterns for reaction-diffusion systems on evolving domains and surfaces. Physical Review E, 2014, 90, 043307.	2.1	20
27	Predicting and forecasting the impact of local outbreaks of COVID-19: use of SEIR-D quantitative epidemiological modelling for healthcare demand and capacity. International Journal of Epidemiology, 2021, 50, 1103-1113.	1.9	20
28	The moving grid finite element method applied to cell movement and deformation. Finite Elements in Analysis and Design, 2013, 74, 76-92.	3.2	19
29	Characterization of turing diffusion-driven instability on evolving domains. Discrete and Continuous Dynamical Systems, 2012, 32, 3975-4000.	0.9	18
30	Stability analysis of reaction-diffusion models on evolving domains: The effects of cross-diffusion. Discrete and Continuous Dynamical Systems, 2015, 36, 2133-2170.	0.9	18
31	Stability analysis of Reaction-Diffusion Systems with constant coefficients on growing domains. International Journal of Dynamical Systems and Differential Equations, 2008, 1, 250.	0.0	17
32	Keratin Dynamics: Modeling the Interplay between Turnover and Transport. PLoS ONE, 2015, 10, e0121090.	2.5	16
33	Fully implicit time-stepping schemes and non-linear solvers for systems of reactionâ€“diffusion equations. Applied Mathematics and Computation, 2014, 244, 361-374.	2.2	15
34	Lumped finite elements for reactionâ€“cross-diffusion systems on stationary surfaces. Computers and Mathematics With Applications, 2017, 74, 3008-3023.	2.7	15
35	Bayesian Parameter Identification for Turing Systems on Stationary and Evolving Domains. Bulletin of Mathematical Biology, 2019, 81, 81-104.	1.9	15
36	Turing instability conditions for growing domains with divergence free mesh velocity. Nonlinear Analysis: Theory, Methods & Applications, 2009, 71, e2250-e2257.	1.1	12

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37	Analysis of stability and convergence of finite-difference methods for a reaction-diffusion problem on a one-dimensional growing domain. IMA Journal of Numerical Analysis, 2011, 31, 212-232.	2.9	12
38	A Model for Selection of Eyespots on Butterfly Wings. PLoS ONE, 2015, 10, e0141434.	2.5	12
39	A predictive model for color pattern formation in the butterfly wing of {it Papilio dardanus}. Hiroshima Mathematical Journal, 2002, 32, 325.	0.3	11
40	Classification of parameter spaces for a reaction-diffusion model on stationary domains. Chaos, Solitons and Fractals, 2017, 103, 33-51.	5.1	11
41	Bulk-surface virtual element method for systems of PDEs in two-space dimensions. Numerische Mathematik, 2021, 147, 305-348.	1.9	11
42	Wave of chaos in a spatial eco-epidemiological system: Generating realistic patterns of patchiness in rabbitâ€“lynx dynamics. Mathematical Biosciences, 2016, 281, 98-119.	1.9	10
43	Preserving invariance properties of reactionâ€“diffusion systems on stationary surfaces. IMA Journal of Numerical Analysis, 2019, 39, 235-270.	2.9	10
44	Whole cell tracking through the optimal control of geometric evolution laws. Journal of Computational Physics, 2015, 297, 495-514.	3.8	9
45	Projected finite elements for reactionâ€“diffusion systems on stationary closed surfaces. Applied Numerical Mathematics, 2015, 96, 45-71.	2.1	9
46	Numerical Preservation of Velocity Induced Invariant Regions for Reactionâ€“Diffusion Systems on Evolving Surfaces. Journal of Scientific Computing, 2018, 77, 971-1000.	2.3	9
47	An integrated framework for quantifying immune-tumour interactions in a 3D co-culture model. Communications Biology, 2021, 4, 781.	4.4	9
48	Growth patterns of noetiid ligaments: implications of developmental models for the origin of an evolutionary novelty among arcoid bivalves. Geological Society Special Publication, 2000, 177, 279-289.	1.3	8
49	A computational framework for particle and whole cell tracking applied to a real biological dataset. Journal of Biomechanics, 2016, 49, 1290-1304.	2.1	8
50	A Robust and Efficient Adaptive Multigrid Solver for the Optimal Control of Phase Field Formulations of Geometric Evolution Laws. Communications in Computational Physics, 2017, 21, 65-92.	1.7	8
51	The Stability Analyses of the Mathematical Models of Hepatitis C Virus Infection. Modern Applied Science, 2014, 9, .	0.6	7
52	A moving grid finite element method applied to a mechanobiochemical model for 3D cell migration. Applied Numerical Mathematics, 2020, 158, 336-359.	2.1	7
53	Projected Finite Elements for Systems of Reaction-Diffusion Equations on Closed Evolving Spheroidal Surfaces. Communications in Computational Physics, 2017, 21, 718-747.	1.7	6
54	Parameter identification through mode isolation for reactionâ€“diffusion systems on arbitrary geometries. International Journal of Biomathematics, 2018, 11, 1850053.	2.9	6

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55	From the Cell Membrane to the Nucleus: Unearthing Transport Mechanisms for Dynein. Bulletin of Mathematical Biology, 2012, 74, 2032-2061.	1.9	5
56	A mathematical understanding of how cytoplasmic dynein walks on microtubules. Royal Society Open Science, 2018, 5, 171568.	2.4	5
57	Domain-Dependent Stability Analysis of a Reactionâ€“Diffusion Model on Compact Circular Geometries. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2018, 28, 1830024.	1.7	4
58	A mathematical analysis of an activator-inhibitor Rho GTPase model. Journal of Computational Dynamics, 2022, 9, 133.	1.1	4
59	Analysis and Simulations of Coupled Bulk-surface Reaction-Diffusion Systems on Exponentially Evolving Volumes. Mathematical Modelling of Natural Phenomena, 2016, 11, 4-32.	2.4	3
60	The Moving Grid Finite Element Method Applied to Biological Problems. , 2003, , 59-65.		3
61	Investigating Optimal Time Step Intervals of Imaging for Data Quality through a Novel Fully-Automated Cell Tracking Approach. Journal of Imaging, 2020, 6, 66.	3.0	2
62	Integrating Actin and Myosin II in a Viscous Model for Cell Migration. Frontiers in Applied Mathematics and Statistics, 2020, 6, .	1.3	2
63	Turing Pattern Formation Under Heterogeneous Distributions of Parameters for an Activator-Depleted Reaction Model. Journal of Nonlinear Science, 2021, 31, 1.	2.1	2
64	Domain-growth-induced patterning for reaction-diffusion systems with linear cross-diffusion. Discrete and Continuous Dynamical Systems - Series B, 2018, 23, 2775-2801.	0.9	2
65	Stability Analysis and Parameter Classification of a Reaction-Diffusion Model on an Annulus. Journal of Applied Nonlinear Dynamics, 2020, 9, 589-617.	0.3	2
66	Characterizing the Effects of Self- and Cross-Diffusion on Stationary Patterns of a Predatorâ€“Prey System. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2020, 30, 2050041.	1.7	1
67	Force Estimation during Cell Migration Using Mathematical Modelling. Journal of Imaging, 2022, 8, 199.	3.0	1
68	A Model for the Proliferationâ€“Quiescence Transition in Human Cells. Mathematics, 2022, 10, 2426.	2.2	1
69	A note on how to develop interdisciplinary collaborations between experimentalists and theoreticians. Interface Focus, 2016, 6, 20160069.	3.0	0
70	Cross-Diffusion in Reaction-Diffusion Models: Analysis, Numerics, and Applications. Mathematics in Industry, 2017, , 385-392.	0.3	0