Luigi Preziosi

List of Publications by Year
in descending order

85 papers	4,051 citations	147726 31 h-index	118793 62 g-index
87 all docs	87 docs citations	87 times ranked	2592 citing authors

#	Article	IF	Citations
1	Modelling solid tumour growth using the theory of mixtures. Mathematical Medicine and Biology, 2003, 20, 341-366.	0.8	351
2	Modeling the early stages of vascular network assembly. EMBO Journal, 2003, 22, 1771-1779.	3.5	280
3	ON THE CLOSURE OF MASS BALANCE MODELS FOR TUMOR GROWTH. Mathematical Models and Methods in Applied Sciences, 2002, 12, 737-754.	1.7	241
4	Percolation, Morphogenesis, and Burgers Dynamics in Blood Vessels Formation. Physical Review Letters, 2003, 90, 118101.	2.9	222
5	Plasticity of Cell Migration In Vivo and In Silico. Annual Review of Cell and Developmental Biology, 2016, 32, 491-526.	4.0	201
6	A two-phase model of solid tumour growth. Applied Mathematics Letters, 2003, 16, 567-573.	1.5	176
7	Mathematical modelling of the loss of tissue compression responsiveness and its role in solid tumour development. Mathematical Medicine and Biology, 2006, 23, 197-229.	0.8	161
8	Multiphase modelling of tumour growth and extracellular matrix interaction: mathematical tools and applications. Journal of Mathematical Biology, 2009, 58, 625-656.	0.8	155
9	A review of mathematical models for the formation of vascular networks. Journal of Theoretical Biology, 2013, 333, 174-209.	0.8	131
10	Cell adhesion mechanisms and stress relaxation in the mechanics of tumours. Biomechanics and Modeling in Mechanobiology, 2009, 8, 397-413.	1.4	113
11	An elasto-visco-plastic model of cell aggregates. Journal of Theoretical Biology, 2010, 262, 35-47.	0.8	100
12	A Cellular Potts model simulating cell migration on and in matrix environments. Mathematical Biosciences and Engineering, 2013, 10, 235-261.	1.0	93
13	On Darcy's law for growing porous media. International Journal of Non-Linear Mechanics, 2002, 37, 485-491.	1.4	86
14	Multiscale Modeling and Mathematical Problems Related to Tumor Evolution and Medical Therapy. Journal of Theoretical Medicine, 2003, 5, 111-136.	0.5	81
15	Review: Rheological properties of biological materials. Comptes Rendus Physique, 2009, 10, 790-811.	0.3	79
16	Multiscale Developments of the Cellular Potts Model. Multiscale Modeling and Simulation, 2012, 10, 342-382.	0.6	75
17	ADVECTION-DIFFUSION MODELS FOR SOLID TUMOUR EVOLUTION IN VIVO AND RELATED FREE BOUNDARY PROBLEM. Mathematical Models and Methods in Applied Sciences, 2000, 10, 379-407.	1.7	74
18	A MULTIPHASE MODEL OF TUMOR AND TISSUE GROWTH INCLUDING CELL ADHESION AND PLASTIC REORGANIZATION. Mathematical Models and Methods in Applied Sciences, 2011, 21, 1901-1932.	1.7	69

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19	A Review of Vasculogenesis Models. Journal of Theoretical Medicine, 2005, 6, 1-19.	0.5	64
20	Predicting the growth of glioblastoma multiforme spheroids using a multiphase porous media model. Biomechanics and Modeling in Mechanobiology, 2016, 15, 1215-1228.	1.4	63
21	Modeling cell movement in anisotropic and heterogeneous network tissues. Networks and Heterogeneous Media, 2007, 2, 333-357.	0.5	62
22	Mechanics and Chemotaxis in the Morphogenesis of Vascular Networks. Bulletin of Mathematical Biology, 2006, 68, 1819-1836.	0.9	61
23	Three scales asymptotic homogenization and its application to layered hierarchical hard tissues. International Journal of Solids and Structures, 2018, 130-131, 190-198.	1.3	60
24	Multiphase and Multiscale Trends in Cancer Modelling. Mathematical Modelling of Natural Phenomena, 2009, 4, 1-11.	0.9	58
25	A multiscale hybrid approach for vasculogenesis and related potential blocking therapies. Progress in Biophysics and Molecular Biology, 2011, 106, 450-462.	1.4	51
26	Stokes' first problem for viscoelastic fluids. Journal of Non-Newtonian Fluid Mechanics, 1987, 25, 239-259.	1.0	45
27	The interplay between stress and growth in solid tumors. Mechanics Research Communications, 2012, 42, 87-91.	1.0	45
28	Modeling the influence of nucleus elasticity on cell invasion in fiber networks and microchannels. Journal of Theoretical Biology, 2013, 317, 394-406.	0.8	42
29	Windblown sand saltation: A statistical approach to fluid threshold shear velocity. Aeolian Research, 2016, 23, 79-91.	1.1	39
30	TUMOR/IMMUNE SYSTEM COMPETITION WITH MEDICALLY INDUCED ACTIVATION/DEACTIVATION. Mathematical Models and Methods in Applied Sciences, 1999, 09, 491-512.	1.7	36
31	Mathematical modelling of the Warburg effect in tumour cords. Journal of Theoretical Biology, 2009, 258, 578-590.	0.8	35
32	A Cellular Potts Model of single cell migration in presence of durotaxis. Mathematical Biosciences, 2016, 275, 57-70.	0.9	34
33	Modelling the compression and reorganization of cell aggregates. Mathematical Medicine and Biology, 2012, 29, 181-204.	0.8	33
34	Individual Cell-Based Model for In-Vitro Mesothelial Invasion of Ovarian Cancer. Mathematical Modelling of Natural Phenomena, 2010, 5, 203-223.	0.9	31
35	A hybrid mathematical model for self-organizing cell migration in the zebrafish lateral line. Journal of Mathematical Biology, 2015, 71, 171-214.	0.8	29
36	Multi-scale analysis and modelling of collective migration in biological systems. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190377.	1.8	29

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37	Influence of nucleus deformability on cell entry into cylindrical structures. Biomechanics and Modeling in Mechanobiology, 2014, 13, 481-502.	1.4	27
38	Kinetic models with non-local sensing determining cell polarization and speed according to independent cues. Journal of Mathematical Biology, 2020, 80, 373-421.	0.8	27
39	Homogenized out-of-plane shear response of three-scale fiber-reinforced composites. Computing and Visualization in Science, 2019, 20, 85-93.	1.2	26
40	Contact inhibition of growth described using a multiphase model and an individual cell based model. Applied Mathematics Letters, 2009, 22, 1483-1490.	1.5	25
41	Evaluating the influence of mechanical stress on anticancer treatments through a multiphase porous media model. Journal of Theoretical Biology, 2017, 421, 179-188.	0.8	25
42	A new model for snow avalanche dynamics based onÂnon-Newtonian fluids. Meccanica, 2010, 45, 753-765.	1.2	23
43	Mechano-transduction in tumour growth modelling. European Physical Journal E, 2013, 36, 23.	0.7	23
44	A cellular Potts model for the MMP-dependent and -independent cancer cell migration in matrix microtracks of different dimensions. Computational Mechanics, 2014, 53, 485-497.	2.2	22
45	Multiphase Models of Tumour Growth. Modeling and Simulation in Science, Engineering and Technology, 2008, , 1-31.	0.4	21
46	Influence of the mechanical properties of the necrotic core on the growth and remodelling of tumour spheroids. International Journal of Non-Linear Mechanics, 2019, 108, 20-32.	1.4	20
47	Individual cell-based models of cell scatter of ARO and MLP-29 cells in response to hepatocyte growth factor. Journal of Theoretical Biology, 2009, 260, 151-160.	0.8	19
48	A multiphase model of tumour segregation in situ by a heterogeneous extracellular matrix. International Journal of Non-Linear Mechanics, 2015, 75, 22-30.	1.4	18
49	Multiphase modeling of tumor growth with matrix remodeling and fibrosis. Mathematical and Computer Modelling, 2010, 52, 969-976.	2.0	16
50	A Hybrid Model Describing Different Morphologies of Tumor Invasion Fronts. Mathematical Modelling of Natural Phenomena, 2012, 7, 78-104.	0.9	15
51	Coherent modelling switch between pointwise and distributed representations of cell aggregates. Journal of Mathematical Biology, 2017, 74, 783-808.	0.8	15
52	Control of tumor growth distributions through kinetic methods. Journal of Theoretical Biology, 2021, 514, 110579.	0.8	15
53	How Nucleus Mechanics and ECM Microstructure Influence the Invasion of Single Cells and Multicellular Aggregates. Bulletin of Mathematical Biology, 2018, 80, 1017-1045.	0.9	14
54	Exogenous control of vascular network formation in vitro: a mathematical model. Networks and Heterogeneous Media, 2006, 1, 621-637.	0.5	14

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55	A multiphase first order model for non-equilibrium sand erosion, transport and sedimentation. Applied Mathematics Letters, 2015, 45, 69-75.	1.5	12
56	A fully Eulerian multiphase model of windblown sand coupled with morphodynamic evolution: Erosion, transport, deposition, and avalanching. Applied Mathematical Modelling, 2020, 79, 68-84.	2.2	12
57	Shield for Sand: An Innovative Barrier for Windblown Sand Mitigation. Recent Patents on Engineering, 2018, 12, 237-246.	0.3	11
58	A three dimensional model of multicellular aggregate compression. Soft Matter, 2019, 15, 10005-10019.	1.2	10
59	A nonlinear elastic description of cell preferential orientations over a stretched substrate. Biomechanics and Modeling in Mechanobiology, 2021, 20, 631-649.	1.4	10
60	Wind-blown particulate transport: A review of computational fluid dynamics models. Mathematics in Engineering, 2019, 1, 508-547.	0.5	10
61	Behavior of cell aggregates under force-controlled compression. International Journal of Non-Linear Mechanics, 2013, 56, 50-55.	1.4	9
62	Derivation and Application of Effective Interface Conditions for Continuum Mechanical Models of Cell Invasion through Thin Membranes. SIAM Journal on Applied Mathematics, 2019, 79, 2011-2031.	0.8	9
63	Passive and active fiber reorientation in anisotropic materials. International Journal of Engineering Science, 2022, 176, 103688.	2.7	9
64	On the Modeling of the Viscoelastic Response of Embryonic Tissues. Mathematics and Mechanics of Solids, 2008, 13, 81-91.	1.5	8
65	Collective migration and patterning during early development of zebrafish posterior lateral line. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190385.	1.8	8
66	Modelling physical limits of migration by a kinetic model with non-local sensing. Journal of Mathematical Biology, 2020, 80, 1759-1801.	0.8	8
67	A Cellular Potts Model for Analyzing Cell Migration across Constraining Pillar Arrays. Axioms, 2021, 10, 32.	0.9	7
68	Cell orientation under stretch: Stability of a linear viscoelastic model. Mathematical Biosciences, 2021, 337, 108630.	0.9	7
69	On an invariance property of the solution to stokes first problem for viscoelastic fluids. Journal of Non-Newtonian Fluid Mechanics, 1989, 33, 225-228.	1.0	6
70	Hybrid and multiscale modelling. Journal of Mathematical Biology, 2006, 53, 977-978.	0.8	6
71	Modeling sand slides by a mechanics-based degenerate parabolic equation. Mathematics and Mechanics of Solids, 2019, 24, 2558-2575.	1.5	6
72	A node-based version of the cellular Potts model. Computers in Biology and Medicine, 2016, 76, 94-112.	3.9	4

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73	Flow of Waxy Crude Oils. , 1997, , 306-313.		4
74	Mathematical Models of the Interaction of Cells and Cell Aggregates with the Extracellular Matrix. Lecture Notes in Mathematics, 2016, , 131-210.	0.1	3
75	Effective interface conditions for continuum mechanical models describing the invasion of multiple cell populations through thin membranes. Applied Mathematics Letters, 2022, 125, 107708.	1.5	3
76	A hybrid model of cell migration in zebrafish embryogenesis. ITM Web of Conferences, 2015, 5, 00013.	0.4	2
77	Degenerate parabolic models for sand slides. Applied Mathematical Modelling, 2021, 89, 1627-1639.	2.2	2
78	Multi-level Mathematical Models for Cell Migration in Confined Environments. Springer Proceedings in Mathematics and Statistics, 2021, , 124-140.	0.1	2
79	A hybrid integro-differential model for the early development of the zebrafish posterior lateral line. Journal of Theoretical Biology, 2021, 514, 110578.	0.8	2
80	Using Mathematical Modelling as a Virtual Microscope to Support Biomedical Research. Springer INdAM Series, 2014, , 59-71.	0.4	1
81	Stability of a non-local kinetic model for cell migration with density-dependent speed. Mathematical Medicine and Biology, 2021, 38, 83-105.	0.8	1
82	Finite Deformation Models and Field Performance. Transport in Porous Media, 1999, 34, 17-27.	1.2	0
83	Computational Models of Vascularization and Therapy in Tumor Growth. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2013, , 227-246.	0.7	0
84	Relevance of Cell-ECM Interactions: From a Biological Perspective to the Mathematical Modeling. ITM Web of Conferences, 2015, 5, 00004.	0.4	0
85	Cell Migration, Biomechanics. , 2015, , 189-194.		0