Paolo Zunino

List of Publications by Year
in descending order

104 papers	2,252 citations	218677 26 h-index	243625 44 g-index
118 all docs	118 docs citations	118 times ranked	1679 citing authors

#	Article	IF	Citations
1	A discontinuous Galerkin method with weighted averages for advection-diffusion equations with locally small and anisotropic diffusivity. IMA Journal of Numerical Analysis, 2008, 29, 235-256.	2.9	154
2	Mathematical and numerical models for transfer of low-density lipoproteins through the arterial walls: a new methodology for the model set up with applications to the study of disturbed lumenal flow. Journal of Biomechanics, 2005, 38, 903-917.	2.1	153
3	Mathematical and Numerical Modeling of Solute Dynamics in Blood Flow and Arterial Walls. SIAM Journal on Numerical Analysis, 2002, 39, 1488-1511.	2.3	109
4	A computational model of drug delivery through microcirculation to compare different tumor treatments. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 1347-1371.	2.1	85
5	A Domain Decomposition Method Based on Weighted Interior Penalties for Advectionâ€Diffusionâ€Reaction Problems. SIAM Journal on Numerical Analysis, 2006, 44, 1612-1638.	2.3	81
6	Numerical simulation of drug eluting coronary stents: Mechanics, fluid dynamics and drug release. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 3633-3644.	6.6	81
7	Expansion and drug elution model of a coronary stent. Computer Methods in Biomechanics and Biomedical Engineering, 2007, 10, 63-73.	1.6	74
8	Multidimensional Pharmacokinetic Models Applied to the Design of Drug-Eluting Stents. Cardiovascular Engineering (Dordrecht, Netherlands), 2004, 4, 181-191.	1.0	71
9	Partitioning strategies for the interaction of a fluid with a poroelastic material based on a Nitscheâ€™s coupling approach. Computer Methods in Applied Mechanics and Engineering, 2015, 292, 138-170.	6.6	68
10	A mixture model for water uptake, degradation, erosion and drug release from polydisperse polymeric networks. Biomaterials, 2010, 31, 3032-3042.	11.4	64
11	Modelling mass and heat transfer in nano-based cancer hyperthermia. Royal Society Open Science, 2015, 2, 150447.	2.4	60
12	A Lagrange multiplier method for a Stokesâ€“Biot fluidâ€“poroelastic structure interaction model. Numerische Mathematik, 2018, 140, 513-553.	1.9	54
13	Robust numerical approximation of coupled Stokes' and Darcy's flows applied to vascular hemodynamics and biochemical transport. ESAIM: Mathematical Modelling and Numerical Analysis, 2011, 45, 447-476.	1.9	52
14	Computational models for fluid exchange between microcirculation and tissue interstitium. Networks and Heterogeneous Media, 2014, 9, 135-159.	1.1	50
15	A multiphysics/multiscale 2D numerical simulation of scaffold-based cartilage regeneration under interstitial perfusion in a bioreactor. Biomechanics and Modeling in Mechanobiology, 2011, 10, 577-589.	2.8	49
16	An operator splitting approach for the interaction between a fluid and a multilayered poroelastic structure. Numerical Methods for Partial Differential Equations, 2015, 31, 1054-1100.	3.6	47
17	A computational study of cancer hyperthermia based on vascular magnetic nanoconstructs. Royal Society Open Science, 2016, 3, 160287.	2.4	38
18	Mathematical modeling, analysis and numerical approximation of second-order elliptic problems with inclusions. Mathematical Models and Methods in Applied Sciences, 2018, 28, 953-978.	3.3	37

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19	Application of Transmural Flow Across In Vitro Microvasculature Enables Direct Sampling of Interstitial Therapeutic Molecule Distribution. Small, 2019, 15, e1902393.	10.0	37
20	Drug delivery patterns for different stenting techniques in coronary bifurcations: a comparative computational study. Biomechanics and Modeling in Mechanobiology, 2013, 12, 657-669.	2.8	35
21	Multiscale Boundary Conditions for Drug Release from Cardiovascular Stents. Multiscale Modeling and Simulation, 2008, 7, 565-588.	1.6	31
22	The non-circular shape of FloWatchÂ®-PAB prevents the need for pulmonary artery reconstruction after banding.Computational fluid dynamics and clinical correlations. European Journal of Cardio-thoracic Surgery, 2006, 29, 93-99.	1.4	30
23	An anisotropic a-posteriori error estimate for a convection-diffusion problem. Computing and Visualization in Science, 2001, 4, 99-104.	1.2	29
24	Simulation of oxygen transfer in stented arteries and correlation with inâ€stent restenosis. International Journal for Numerical Methods in Biomedical Engineering, 2013, 29, 1373-1387.	2.1	29
25	Stabilized extended finite elements for the approximation of saddle point problems with unfitted interfaces. Calcolo, 2015, 52, 123-152.	1.1	28
26	Derivation and analysis of coupled PDEs on manifolds with high dimensionality gap arising from topological model reduction. ESAIM: Mathematical Modelling and Numerical Analysis, 2019, 53, 2047-2080.	1.9	27
27	A computational model for microcirculation including Fahraeusâ€Lindqvist effect, plasma skimming and fluid exchange with the tissue interstitium. International Journal for Numerical Methods in Biomedical Engineering, 2019, 35, e3165.	2.1	27
28	A Domain Decomposition Method for Advection-Diffusion Processes with Application to Blood Solutes. SIAM Journal of Scientific Computing, 2002, 23, 1959-1980.	2.8	26
29	An unfitted interface penalty method for the numerical approximation of contrast problems. Applied Numerical Mathematics, 2011, 61, 1059-1076.	2.1	26
30	Inertial Motions of a Rigid Body with a Cavity Filled with a Viscous Liquid. Archive for Rational Mechanics and Analysis, 2016, 221, 487-526.	2.4	26
31	Model Reduction Strategies Enable Computational Analysis of Controlled Drug Release from Cardiovascular Stents. SIAM Journal on Applied Mathematics, 2011, 71, 2312-2333.	1.8	25
32	Stent deformation, physical stress, and drug elution obtained with provisional stenting, conventional culotte and Tryton-based culotte to treat bifurcations: a virtual simulation study. EuroIntervention, 2014, 9, 1441-1453.	3.2	25
33	MODELING POLYMERIC CONTROLLED DRUG RELEASE AND TRANSPORT PHENOMENA IN THE ARTERIAL TISSUE. Mathematical Models and Methods in Applied Sciences, 2010, 20, 1759-1786.	3.3	24
34	Numerical treatment of boundary conditions to replace lateral branches in hemodynamics. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 1165-1183.	2.1	23
35	A computational model applied to myocardial perfusion in the human heart: From large coronaries to microvasculature. Journal of Computational Physics, 2021, 424, 109836.	3.8	23
36	Numerical simulations of the microvascular fluid balance with a non-linear model of the lymphatic system. Microvascular Research, 2019, 122, 101-110.	2.5	22

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37	Design and validation of an osteochondral bioreactor for the screening of treatments for osteoarthritis. Biomedical Microdevices, 2018, 20, 18.	2.8	20
38	Mathematical analysis, finite element approximation and numerical solvers for the interaction of 3D reservoirs with 1D wells. GEM - International Journal on Geomathematics, 2019, 10, 1.	1.6	20
39	Analysis of backward Euler/extended finite element discretization of parabolic problems with moving interfaces. Computer Methods in Applied Mechanics and Engineering, 2013, 258, 152-165.	6.6	19
40	ANALYSIS OF PARABOLIC PROBLEMS ON PARTITIONED DOMAINS WITH NONLINEAR CONDITIONS AT THE INTERFACE: APPLICATION TO MASS TRANSFER THROUGH SEMI-PERMEABLE MEMBRANES. Mathematical Models and Methods in Applied Sciences, 2006, 16, 479-501.	3.3	18
41	Analysis and Approximation of Mixed-Dimensional PDEs on 3D-1D Domains Coupled with Lagrange Multipliers. SIAM Journal on Numerical Analysis, 2021, 59, 558-582.	2.3	18
42	Numerical approximation with NitscheÊ¼s coupling of transient StokesÊ¼/DarcyÊ¼s flow problems applied to hemodynamics. Applied Numerical Mathematics, 2012, 62, 378-395.	2.1	17
43	A Finite Element Method Based on Weighted Interior Penalties for Heterogeneous Incompressible Flows. SIAM Journal on Numerical Analysis, 2009, 47, 3990-4020.	2.3	16
44	Distributed and Lumped Parameter Models for the Characterization of High Throughput Bioreactors. PLoS ONE, 2016, 11, e0162774.	2.5	16
45	A Deep Learning Approach Validates Genetic Risk Factors for Late Toxicity After Prostate Cancer Radiotherapy in a REQUITE Multi-National Cohort. Frontiers in Oncology, 2020, 10, 541281.	2.8	15
46	Numerical Approximation of Large Contrast Problems with the Unfitted Nitsche Method. Lecture Notes in Computational Science and Engineering, 2011, , 227-282.	0.3	15
47	A Mixed Finite Element Method for Modeling the Fluid Exchange Between Microcirculation and Tissue Interstitium. SEMA SIMAI Springer Series, 2016, , 3-25.	0.7	14
48	A Mesoscale Computational Model for Microvascular Oxygen Transfer. Annals of Biomedical Engineering, 2021, 49, 3356-3373.	2.5	14
49	Inertial motions of a rigid body with a cavity filled with a viscous liquid. Comptes Rendus - Mecanique, 2013, 341, 760-765.	2.1	13
50	Integrated Stent Models Based on Dimension Reduction: Review and Future Perspectives. Annals of Biomedical Engineering, 2016, 44, 604-617.	2.5	13
51	Mathematical analysis and numerical approximation of a general linearized poro-hyperelastic model. Computers and Mathematics With Applications, 2021, 91, 202-228.	2.7	12
52	Numerical approximation of incompressible flows with net flux defective boundary conditions by means of penalty techniques. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 3026-3038.	6.6	11
53	Discontinuous Galerkin Methods Based on Weighted Interior Penalties for Second Order PDEs withÂNon-smooth Coefficients. Journal of Scientific Computing, 2009, 38, 99-126.	2.3	11
54	Controlled Release with Finite Dissolution Rate. SIAM Journal on Applied Mathematics, 2011, 71, 731-752.	1.8	11

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55	Computational analysis of energy distribution of coupled blood flow and arterial deformation. International Journal of Advances in Engineering Sciences and Applied Mathematics, 2016, 8, 70-85.	1.1	11
56	A computational framework for fluidâ€“porous structure interaction with large structural deformation. Meccanica, 2019, 54, 101-121.	2.0	11
57	Development of a method for generating SNP interaction-aware polygenic risk scores for radiotherapy toxicity. Radiotherapy and Oncology, 2021, 159, 241-248.	0.6	11
58	Trends in biomedical engineering: focus on Smart Bio-Materials and Drug Delivery. Journal of Applied Biomaterials and Biomechanics, 2011, 9, 87-97.	0.4	9
59	Unfitted FEM for Modelling the Interaction of Multiple Fractures in a Poroelastic Medium. Lecture Notes in Computational Science and Engineering, 2017, , 331-352.	0.3	9
60	Effects of Poroelasticity on Fluid-Structure Interaction in Arteries: a Computational Sensitivity Study. Modeling, Simulation and Applications, 2015, , 197-220.	1.3	6
61	Dimensional model reduction for flow through fractures in poroelastic media. ESAIM: Mathematical Modelling and Numerical Analysis, 0, , .	1.9	6
62	A surrogate model for plaque modeling in carotids based on Robin conditions calibrated by cine MRI data. International Journal for Numerical Methods in Biomedical Engineering, 2021, 37, e3447.	2.1	6
63	A Primer on PDEs. Unitext, 2013, , .	0.1	5
64	A tissue chamber chip for assessing nanoparticle mobility in the extravascular space. Biomedical Microdevices, 2019, 21, 41.	2.8	5
65	Modeling the cardiac response to hemodynamic changes associated with COVID-19: a computational study. Mathematical Biosciences and Engineering, 2021, 18, 3364-3383.	1.9	5
66	Prediction of myocardial blood flow under stress conditions by means of a computational model. European Journal of Nuclear Medicine and Molecular Imaging, 2022, 49, 1894-1905.	6.4	5
67	A global sensitivity analysis approach applied to a multiscale model of microvascular flow. Computer Methods in Biomechanics and Biomedical Engineering, 2020, 23, 1215-1224.	1.6	4
68	In silico model of the early effects of radiation therapy on the microcirculation and the surrounding tissues. Physica Medica, 2020, 73, 125-134.	0.7	4
69	A Numerical Study of the Interaction of Blood Flow and Drug Release from Cardiovascular Stents. , 2008, , 75-82.		4
70	A HIERARCHICAL MULTISCALE MODEL FOR PREDICTING THE VASCULAR BEHAVIOR OF BLOOD-BORNE NANOMEDICINES. International Journal for Multiscale Computational Engineering, 2020, 18, 335-359.	1.2	4
71	Numerical solvers for a poromechanic problem with a moving boundary. Mathematics in Engineering, 2019, 1, 824-848.	0.9	4
72	Iterative splitting schemes for a soft material poromechanics model. Computer Methods in Applied Mechanics and Engineering, 2022, 388, 114183.	6.6	4

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73	Multiphysics Computational Modeling in Cartilage Tissue Engineering. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2011, , 267-285.	1.0	3
74	Fluid-structure interaction in arteries with a poroelastic wall model. , 2014, , .		3
75	Multiscale Modeling of Glacial Loading by a 3D Thermo-Hydro-Mechanical Approach Including Erosion and Isostasy. Geosciences (Switzerland), 2019, 9, 465.	2.2	3
76	Mathematical Modeling and Numerical Simulation of Atherosclerotic Plaque Progression Based on Fluid-Structure Interaction. Journal of Mathematical Fluid Mechanics, 2021, 23, 1.	1.0	3
77	Simulation of Flow in Fractured Poroelastic Media: A Comparison of Different Discretization Approaches. Lecture Notes in Computer Science, 2015, , 3-14.	1.3	3
78	Multiscale Models of Drug Delivery by Thin Implantable Devices. , 2009, , .		3
79	A multiscale heat transfer model for nuclear reactor assemblies. Nuclear Engineering and Design, 2020, 367, 110794.	1.7	2
80	Iterative Substructuring Methods for Advection â€" Diffusion Problems in Heterogeneous Media. Lecture Notes in Computational Science and Engineering, 2003, , 184-210.	0.3	2
81	Numerical Investigation of Convergence Rates for the FEM Approximation of 3D-1D Coupled Problems. Lecture Notes in Computational Science and Engineering, 2015, , 727-734.	0.3	2
82	Invito alle equazioni a derivate parziali. Unitext, 2009, , .	0.1	1
83	A Multiscale Mixture Model for Polymer Degradation and Erosion. , 2010, , .		1
84	Trends in biomedical engineering: focus on Patient Specific Modeling and Life Support Systems. Journal of Applied Biomaterials and Biomechanics, 2011, 9, 109-117.	0.4	1
85	Multiscale computational analysis of degradable polymers. Modeling, Simulation and Applications, 2012, , 333-361.	1.3	1
86	A Multiscale Modeling Approach to Transport of Nano-Constructs in Biological Tissues. Lecture Notes in Computational Science and Engineering, 2017, , 109-138.	0.3	1
87	Microcirculationâ€onâ€Chip: Application of Transmural Flow Across In Vitro Microvasculature Enables Direct Sampling of Interstitial Therapeutic Molecule Distribution (Small 46/2019). Small, 2019, 15, 1970247.	10.0	1
88	Hyperbolicâ€"Parabolic Coupling and the Occurrence of Resonance in Partially Dissipative Systems. Advances in Mathematical Fluid Mechanics, 2014, , 197-256.	0.1	1
89	Reaction-diffusion models. Unitext, 2013, , 139-188.	0.1	1
90	An Immersed Boundary Method for Drug Release Applied to Drug Eluting Stents Dedicated to Arterial Bifurcations. , 2013, , 401-409.		1

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91	Scalar Conservation Laws. Unitext, 2013, , 17-58.	0.1	1
92	A coupled 3D-1D multiscale Keller-Segel model of chemotaxis and its application to cancer invasion. Discrete and Continuous Dynamical Systems - Series S, 2022, .	1.1	1
93	Analysis of an evolution problem for controlled drug release. BoletÃn De La Sociedad EspaÃ‘ola De MatemÃ‡tica Aplicada, 2011, 56, 63-79.	0.9	0
94	Multiscale modeling of diffusion phenomena in polymers. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2013, , 71-86.	0.6	0
95	A computational study of microscale flow and mass transport in vasculatized tumors. , 2014, , .		0
96	Introduction: 31st Annual Gallery of Fluid Motion (Pittsburgh, Pennsylvania, USA, 2013). Physics of Fluids, 2014, 26, 091101.	4.0	0
97	Theory and application of arterial tissue in-host remodelling. , 2015, 2015, 1869-72.		0
98	A mixed finite element method for modeling the fluid exchange between microcirculation and tissue interstitium. AIP Conference Proceedings, 2018, , .	0.4	0
99	EP-1927 Mechanistic modelling of RT damage to microvasculature and of its effect on tumour microenvironment. Radiotherapy and Oncology, 2019, 133, S1048-S1049.	0.6	0
100	A computational 3D model for the multiscale analysis of nuclear reactors assembly. Journal of Physics: Conference Series, 2020, 1599, 012047.	0.4	0
101	Solutions of selected exercises. Unitext, 2013, , 389-446.	0.1	0
102	Waves and vibrations. Unitext, 2013, , 189-240.	0.1	0
103	A Mixed Dimensional Model for the Interaction of a Well with a Poroelastic Material. Lecture Notes in Computational Science and Engineering, 2021, , 1235-1242.	0.3	0
104	PO-1804: In silico model of radiation-therapy damage to microvasculature of tissues surrounding tumour. Radiotherapy and Oncology, 2020, 152, S1006-S1007.	0.6	0