Pablo J. Blanco

List of Publications by Year
in descending order

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114 papers	2,428 citations	201385 27 h-index	243296 44 g-index
123 all docs	123 docs citations	123 times ranked	1926 citing authors

#	Article	IF	Citations
1	A benchmark study of numerical schemes for oneâ€dimensional arterial blood flow modelling. International Journal for Numerical Methods in Biomedical Engineering, 2015, 31, e02732.	1.0	144
2	Blood pressure gradients in cerebral arteries: a clue to pathogenesis of cerebral small vessel disease. Stroke and Vascular Neurology, 2017, 2, 108-117.	1.5	125
3	Multidimensional modelling for the carotid artery blood flow. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 4002-4017.	3.4	116
4	An Anatomically Detailed Arterial Network Model for One-Dimensional Computational Hemodynamics. IEEE Transactions on Biomedical Engineering, 2015, 62, 736-753.	2.5	111
5	Variational Foundations and Generalized Unified Theory of RVE-Based Multiscale Models. Archives of Computational Methods in Engineering, 2016, 23, 191-253.	6.0	110
6	A unified variational approach for coupling 3Dâ€"1D models and its blood flow applications. Computer Methods in Applied Mechanics and Engineering, 2007, 196, 4391-4410.	3.4	102
7	An RVE-based multiscale theory of solids with micro-scale inertia and body force effects. Mechanics of Materials, 2015, 80, 136-144.	1.7	92
8	On the potentialities of 3Dâ€"1D coupled models in hemodynamics simulations. Journal of Biomechanics, 2009, 42, 919-930.	0.9	75
9	Blood flow distribution in an anatomically detailed arterial network model: criteria and algorithms. Biomechanics and Modeling in Mechanobiology, 2014, 13, 1303-1330.	1.4	66
10	Multiscale formulation for material failure accounting for cohesive cracks at the macro and micro scales. International Journal of Plasticity, 2016, 76, 75-110.	4.1	66
11	A dimensionally-heterogeneous closed-loop model for the cardiovascular system and its applications. Medical Engineering and Physics, 2013, 35, 652-667.	0.8	60
12	An assessment of the Gurson yield criterion by a computational multiâ€scale approach. Engineering Computations, 2009, 26, 281-301.	0.7	52
13	Failure-Oriented Multi-scale Variational Formulation: Micro-structures with nucleation and evolution of softening bands. Computer Methods in Applied Mechanics and Engineering, 2013, 257, 221-247.	3.4	44
14	A twoâ€scale failure model for heterogeneous materials: numerical implementation based on the finite element method. International Journal for Numerical Methods in Engineering, 2014, 97, 313-351.	1.5	41
15	A high order approximation of hyperbolic conservation laws in networks: Application to one-dimensional blood flow. Journal of Computational Physics, 2015, 300, 423-437.	1.9	40
16	A variational approach for coupling kinematically incompatible structural models. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 1577-1602.	3.4	37
17	The method of multiscale virtual power for the derivation of a second order mechanical model. Mechanics of Materials, 2016, 99, 53-67.	1.7	37
18	Comparison of 1D and 3D Models for the Estimation of Fractional Flow Reserve. Scientific Reports, 2018, 8, 17275.	1.6	36

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19	Nonâ€invasive coronary CT angiographyâ€derived fractional flow reserve: A benchmark study comparing the diagnostic performance of four different computational methodologies. International Journal for Numerical Methods in Biomedical Engineering, 2019, 35, e3235.	1.0	35
20	A highâ€order local time stepping finite volume solver for oneâ€dimensional blood flow simulations: application to the ADAN model. International Journal for Numerical Methods in Biomedical Engineering, 2016, 32, e02761.	1.0	33
21	Roadmap for cardiovascular circulation model. Journal of Physiology, 2016, 594, 6909-6928.	1.3	33
22	Implicit Coupling of One-Dimensional and Three-Dimensional Blood Flow Models with Compliant Vessels. Multiscale Modeling and Simulation, 2013, 11, 474-506.	0.6	32
23	Bond Graph Model of Cerebral Circulation: Toward Clinically Feasible Systemic Blood Flow Simulations. Frontiers in Physiology, 2018, 9, 148.	1.3	32
24	Mathematical Model of Blood Flow in an Anatomically Detailed Arterial Network of the Arm. ESAIM: Mathematical Modelling and Numerical Analysis, 2013, 47, 961-985.	0.8	31
25	Towards a Glaucoma Risk Index Based on Simulated Hemodynamics from Fundus Images. Lecture Notes in Computer Science, 2018, , 65-73.	1.0	31
26	Identification of vascular territory resistances in one-dimensional hemodynamics simulations. Journal of Biomechanics, 2012, 45, 2066-2073.	0.9	30
27	On the integration of the baroreflex control mechanism in a heterogeneous model of the cardiovascular system. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 412-433.	1.0	30
28	A computational approach to generate concurrent arterial networks in vascular territories. International Journal for Numerical Methods in Biomedical Engineering, 2013, 29, 601-614.	1.0	29
29	A two-level time step technique for the partitioned solution of one-dimensional arterial networks. Computer Methods in Applied Mechanics and Engineering, 2012, 237-240, 212-226.	3.4	27
30	Partitioned Analysis for Dimensionally-Heterogeneous Hydraulic Networks. Multiscale Modeling and Simulation, 2011, 9, 872-903.	0.6	26
31	Consistent treatment of viscoelastic effects at junctions in one-dimensional blood flow models. Journal of Computational Physics, 2016, 314, 167-193.	1.9	26
32	Algorithms for the partitioned solution of weakly coupled fluid models for cardiovascular flows. International Journal for Numerical Methods in Biomedical Engineering, 2011, 27, 2035-2057.	1.0	25
33	A head-to-head comparison between CT- and IVUS-derived coronary blood flow models. Journal of Biomechanics, 2017, 51, 65-76.	0.9	25
34	HeMoLab â€" Hemodynamics Modelling Laboratory: An application for modelling the human cardiovascular system. Computers in Biology and Medicine, 2012, 42, 993-1004.	3.9	24
35	Assessment of reducedâ€order unscented Kalman filter for parameter identification in 1â€dimensional blood flow models using experimental data. International Journal for Numerical Methods in Biomedical Engineering, 2017, 33, e2843.	1.0	24
36	Coronary fractional flow reserve derived from intravascular ultrasound imaging: Validation of a new computational method of fusion between anatomy and physiology. Catheterization and Cardiovascular Interventions, 2019, 93, 266-274.	0.7	24

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37	Improving Cardiac Phase Extraction in IVUS Studies by Integration of Gating Methods. IEEE Transactions on Biomedical Engineering, 2015, 62, 2867-2877.	2.5	23
38	Black-box decomposition approach for computational hemodynamics: One-dimensional models. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 1389-1405.	3.4	21
39	Thermomechanical Multiscale Constitutive Modeling: Accounting for Microstructural Thermal Effects. Journal of Elasticity, 2014, 115, 27-46.	0.9	21
40	Propagating uncertainties in large-scale hemodynamics models via network uncertainty quantification and reduced-order modeling. Computer Methods in Applied Mechanics and Engineering, 2020, 358, 112626.	3.4	19
41	Modeling dimensionally-heterogeneous problems: analysis, approximation and applications. Numerische Mathematik, 2011, 119, 299-335.	0.9	18
42	Registration Methods for IVUS: Transversal and Longitudinal Transducer Motion Compensation. IEEE Transactions on Biomedical Engineering, 2017, 64, 890-903.	2.5	18
43	Homogenization of the Navier-Stokes equations by means of the Multi-scale Virtual Power Principle. Computer Methods in Applied Mechanics and Engineering, 2017, 315, 760-779.	3.4	18
44	A data-driven approach for addressing the lack of flow waveform data in studies of cerebral arterial flow in older adults. Physiological Measurement, 2018, 39, 015006.	1.2	18
45	Reduced-Order Unscented Kalman Filter With Observations in the Frequency Domain: Application to Computational Hemodynamics. IEEE Transactions on Biomedical Engineering, 2019, 66, 1269-1276.	2.5	17
46	Assessing the influence of heart rate in local hemodynamics through coupled 3Dâ€•1Dâ€•0D models. International Journal for Numerical Methods in Biomedical Engineering, 2010, 26, 890-903.	1.0	16
47	Cohesive surface model for fracture based on a two-scale formulation: computational implementation aspects. Computational Mechanics, 2016, 58, 549-585.	2.2	16
48	Adaptive constrained constructive optimisation for complex vascularisation processes. Scientific Reports, 2021, 11, 6180.	1.6	16
49	Boundary control in computational haemodynamics. Journal of Fluid Mechanics, 2018, 847, 329-364.	1.4	15
50	Multi-scale modelling of arterial tissue: Linking networks of fibres to continua. Computer Methods in Applied Mechanics and Engineering, 2018, 341, 740-787.	3.4	15
51	Hybrid element-based approximation for the Navierâ€"Stokes equations in pipe-like domains. Computer Methods in Applied Mechanics and Engineering, 2015, 283, 971-993.	3.4	14
52	Iterative strong coupling of dimensionally heterogeneous models. International Journal for Numerical Methods in Engineering, 2010, 81, 1558-1580.	1.5	13
53	A blackâ€•box decomposition approach for coupling heterogeneous components in hemodynamics simulations. International Journal for Numerical Methods in Biomedical Engineering, 2013, 29, 408-427.	1.0	13
54	Transversally enriched pipe element method (TEPEM): An effective numerical approach for blood flow modeling. International Journal for Numerical Methods in Biomedical Engineering, 2017, 33, e2808.	1.0	13

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55	Fully automated lumen and vessel contour segmentation in intravascular ultrasound datasets. Medical Image Analysis, 2022, 75, 102262.	7.0	13
56	Computational modeling of blood flow steal phenomena caused by subclavian stenoses. Journal of Biomechanics, 2016, 49, 1593-1600.	0.9	12
57	A computational framework to characterize and compare the geometry of coronary networks. International Journal for Numerical Methods in Biomedical Engineering, 2017, 33, e02800.	1.0	12
58	On the continuity of mean total normal stress in geometrical multiscale cardiovascular problems. Journal of Computational Physics, 2013, 251, 136-155.	1.9	11
59	An integrated mathematical model of the cardiovascular and respiratory systems. International Journal for Numerical Methods in Biomedical Engineering, 2016, 32, e02736.	1.0	11
60	On the anatomical definition of arterial networks in blood flow simulations: comparison of detailed and simplified models. Biomechanics and Modeling in Mechanobiology, 2020, 19, 1663-1678.	1.4	11
61	Extended Variational Formulation for Heterogeneous Partial Differential Equations. Computational Methods in Applied Mathematics, 2011, 11, 141-172.	0.4	9
62	Integrated cardiorespiratory system model with short timescale control mechanisms. International Journal for Numerical Methods in Biomedical Engineering, 2021, 37, e3332.	1.0	9
63	Damage-driven strain localisation in networks of fibres: A computational homogenisation approach. Computers and Structures, 2021, 255, 106635.	2.4	9
64	Tuning a lattice-Boltzmann model for applications in computational hemodynamics. Medical Engineering and Physics, 2012, 34, 339-349.	0.8	8
65	On the effect of preload and pre-stretch on hemodynamic simulations: an integrative approach. Biomechanics and Modeling in Mechanobiology, 2016, 15, 593-627.	1.4	8
66	Automated lumen segmentation using multi-frame convolutional neural networks in intravascular ultrasound datasets. European Heart Journal Digital Health, 2020, 1, 75-82.	0.7	8
67	Parallel generation of extensive vascular networks with application to an archetypal human kidney model. Royal Society Open Science, 2021, 8, 210973.	1.1	8
68	Sensitivity analysis in kinematically incompatible models. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 3287-3298.	3.4	7
69	On the search of more stable second-order lattice-Boltzmann schemes in confined flows. Journal of Computational Physics, 2015, 294, 605-618.	1.9	7
70	Database system support of simulation data. Proceedings of the VLDB Endowment, 2016, 9, 1329-1340.	2.1	7
71	Mechanical Characterization of the Vessel Wall by Data Assimilation of Intravascular Ultrasound Studies. Frontiers in Physiology, 2018, 9, 292.	1.3	7
72	Towards fast hemodynamic simulations in large-scale circulatory networks. Computer Methods in Applied Mechanics and Engineering, 2019, 344, 734-765.	3.4	7

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73	A variational framework for fluidâ€“solid interaction problems based on immersed domains: Theoretical bases. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 2353-2371.	3.4	6
74	On the search of arterial geometry heritability. International Journal of Cardiology, 2016, 221, 1013-1021.	0.8	6
75	Association between three-dimensional vessel geometry and the presence of atherosclerotic plaques in the left anterior descending coronary artery of high-risk patients. Biomedical Signal Processing and Control, 2017, 31, 569-575.	3.5	6
76	The Effects of Cerebral Vasospasm on Cerebral Blood Flow and the Effects of Induced Hypertension: A Mathematical Modelling Study. Interventional Neurology, 2019, 8, 152-163.	1.8	6
77	Software livre e de cÃ³digo aberto para avaliaÃ§Ã£o de imagens de angiotomografia de coronÃ¡rias. Arquivos Brasileiros De Cardiologia, 2012, 99, 944-951.	0.3	5
78	Computer-aided quantification of microvascular networks: Application to alterations due to pathological angiogenesis in the hamster. Microvascular Research, 2017, 112, 53-64.	1.1	5
79	A variational approach to embed 1D beam models into 3D solid continua. Computers and Structures, 2018, 206, 145-168.	2.4	5
80	Identification of residual stresses in multi-layered arterial wall tissues using a variational framework. Computer Methods in Applied Mechanics and Engineering, 2017, 319, 287-313.	3.4	4
81	Scaling laws and the left main coronary artery bifurcation. A combination of geometric and simulation analyses. Medical Engineering and Physics, 2022, 99, 103701.	0.8	4
82	How to identify which patients should not have a systolic blood pressure target of <120 mmHg. European Heart Journal, 2022, 43, 538-539.	1.0	4
83	The role of the variational formulation in the dimensionally-heterogeneous modelling of the human cardiovascular system. Modeling, Simulation and Applications, 2012, , 251-288.	1.3	3
84	Thermodynamic analogies for the characterization of 3D human coronary arteries. Biomedical Signal Processing and Control, 2018, 40, 163-170.	3.5	3
85	Coronary arterial geometry: A comprehensive comparison of two imaging modalities. International Journal for Numerical Methods in Biomedical Engineering, 2021, 37, e3442.	1.0	3
86	Coupled models technology in multi-scale computational haemodynamics. International Journal of Biomedical Engineering and Technology, 2011, 5, 132.	0.2	2
87	Three-dimensional reconstruction of coronary arteries based on the integration of intravascular ultrasound and conventional angiography. Revista Brasileira De Cardiologia Invasiva (English) Tj ETQq1 1 0.784314 rg BT /Overlock 10 T	0.1	2
88	TCT-619 Comparison of one-dimensional (1D) and three-dimensional (3D) models for the estimation of coronary fractional flow reserve through cardiovascular imaging. Journal of the American College of Cardiology, 2018, 72, B248.	1.2	2
89	A new robust formulation for optical-flow/material identification problems. Computer Methods in Applied Mechanics and Engineering, 2019, 351, 766-788.	3.4	2
90	Left Ventricular Assist Device Flow Pattern Analysis Using Computational Fluid Dynamics at the Time of Invasive Hemodynamic Ramp Study: Using Patient-Specific Data to Optimize the Ramp Study. Journal of Heart and Lung Transplantation, 2021, 40, S449.	0.3	2

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91	Sheltered in Stromal Tissue Cells, Trypanosoma cruzi Orchestrates Inflammatory Neovascularization via Activation of the Mast Cell Chymase Pathway. Pathogens, 2022, 11, 187.	1.2	2
92	A mid-fidelity numerical method for blood flow in deformable vessels. Computer Methods in Applied Mechanics and Engineering, 2022, 392, 114654.	3.4	2
93	Human vs. machine vs. core lab for the assessment of coronary atherosclerosis with lumen and vessel contour segmentation with intravascular ultrasound. International Journal of Cardiovascular Imaging, 0, , 1.	0.2	2
94	Sensitivity of Blood Flow Patterns to the Constitutive Law of the Fluid. , 2006, , 181-181.		1
95	A biologically-inspired mesh optimizer based on pseudo-material remodeling. Computational Mechanics, 2022, 69, 505-525.	2.2	1
96	Mortar Coupling for Heterogeneous Partial Differential Equations. Lecture Notes in Computational Science and Engineering, 2013, , 419-426.	0.1	1
97	Combining Transversal and Longitudinal Registration in IVUS Studies. Lecture Notes in Computer Science, 2015, , 346-353.	1.0	1
98	ReconstruÃ§Ã£o tridimensional de artÃ©rias coronÃ¡rias a partir da integraÃ§Ã£o do ultrassom intracoronÃ¡rio e da angiografia convencional. Revista Brasileira De Cardiologia Invasiva, 2015, 23, 134-138.	0.1	0
99	TCT-573 Head-to-head comparison between coronary computed tomography angiography (CCTA) and intravascular ultrasound (IVUS) tridimensional models: a geometric point of view. Journal of the American College of Cardiology, 2016, 68, B232.	1.2	0
100	TCT-535 Coronary computed tomography angiography (CCTA) blood flow model, how we can improve it? Insights based on comparison with intravascular ultrasound (IVUS) tridimensional model.. Journal of the American College of Cardiology, 2016, 68, B216.	1.2	0
101	TCT-72 Computational fractional flow reserve derived from three-dimensional intravascular ultrasound: a new algorithm of fusion between anatomy and physiology. Journal of the American College of Cardiology, 2017, 70, B31-B32.	1.2	0
102	A simple coronary blood flow model to study the collateral flow index. Biomechanics and Modeling in Mechanobiology, 2021, 20, 1365-1382.	1.4	0
103	Combining Invasive Cardiopulmonary Exercise Testing with Computational Fluid Dynamics to Better Understand LVAD Fluid Mechanics during Exercise. Journal of Heart and Lung Transplantation, 2021, 40, S450-S451.	0.3	0
104	Simultaneous assessment of coronary stenosis relevance with automated computed tomography angiography and intravascular ultrasound analyses and fractional flow reserve. Coronary Artery Disease, 2021, Publish Ahead of Print, 25-30.	0.3	0
105	Absorbable Stents and the Ever-Evolving Coronary Hemodynamic Landscape. Cardiovascular Revascularization Medicine, 2021, 29, 16-17.	0.3	0
106	A multi-scale approach to model arterial tissue. Anais Do ... Congresso Ibero-Latino-Americano De MÃ©todos Computacionais Em Engenharia, 0, , .	0.0	0
107	RVE-based multiscale modeling for the Navier-Stokes equations: linking continuum and Lattice-Boltzmann models. , 0, , .		0
108	Fast numerical method for blood flow simulation in three-dimensional arterial trees. Anais Do ... Congresso Ibero-Latino-Americano De MÃ©todos Computacionais Em Engenharia, 0, , .	0.0	0

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109	Mechanical characterization of arterial walls based on IVUS studies. Anais Do ... Congresso Ibero-Latino-Americano De MÃ©todos Computacionais Em Engenharia, 0, , .	0.0	0
110	An efficient method for the numerical solution of blood flow in 3D bifurcated regions. , 0, , .		0
111	MediÃ§Ã£o do Fluxo SanguÃneo Coronariano por Angiocoronariografia Convencional por um Novo MÃ©todo Baseado na DetecÃ§Ã£o da Densidade de Contraste. Arquivos Brasileiros De Cardiologia, 2020, 115, 513-514.	0.3	0
112	Feasibility of coronary blood flow simulations using mid-fidelity numeric and geometric models. Biomechanics and Modeling in Mechanobiology, 2022, 21, 317-334.	1.4	0
113	Optimization of Flow Dynamics During the HeartWare HVAD to HeartMate 3 Exchange: A Computational Study Assessing Differential Surgical Techniques. Journal of Heart and Lung Transplantation, 2022, 41, S136.	0.3	0
114	A Computational Study of Aortic Insufficiency in Patients Supported with Left Ventricular Assist Devices. Journal of Heart and Lung Transplantation, 2022, 41, S32-S33.	0.3	0