Christian Vergara

List of Publications by Year
in descending order

59 papers	1,612 citations	279798 23 h-index	330143 37 g-index
62 all docs	62 docs citations	62 times ranked	1243 citing authors

#	Article	IF	Citations
1	Fluidâ€“structure partitioned procedures based on Robin transmission conditions. Journal of Computational Physics, 2008, 227, 7027-7051.	3.8	212
2	Robinâ€“Robin preconditioned Krylov methods for fluidâ€“structure interaction problems. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 2768-2784.	6.6	88
3	Comparative Finite Element Model Analysis of Ascending Aortic Flow in Bicuspid and Tricuspid Aortic Valve. Artificial Organs, 2010, 34, 1114-1120.	1.9	78
4	Modeling cardiac muscle fibers in ventricular and atrial electrophysiology simulations. Computer Methods in Applied Mechanics and Engineering, 2021, 373, 113468.	6.6	58
5	Analysis and Optimization of Robinâ€“Robin Partitioned Procedures in Fluid-Structure Interaction Problems. SIAM Journal on Numerical Analysis, 2010, 48, 2091-2116.	2.3	56
6	Influence of Bicuspid Valve Geometry on Ascending Aortic Fluid Dynamics: A Parametric Study. Artificial Organs, 2012, 36, 368-378.	1.9	53
7	Helical flows and asymmetry of blood jet in dilated ascending aorta with normally functioning bicuspid valve. Biomechanics and Modeling in Mechanobiology, 2013, 12, 801-813.	2.8	52
8	A Variational Approach for Estimating the Compliance of the Cardiovascular Tissue: An Inverse Fluid-Structure Interaction Problem. SIAM Journal of Scientific Computing, 2011, 33, 1181-1211.	2.8	49
9	Patient-specific generation of the Purkinje network driven by clinical measurements of a normal propagation. Medical and Biological Engineering and Computing, 2014, 52, 813-826.	2.8	44
10	Womersley Number-Based Estimates of Blood Flow Rate in Doppler Analysis: In Vivo Validation by Means of Phase-Contrast MRI. IEEE Transactions on Biomedical Engineering, 2010, 57, 1807-1815.	4.2	41
11	A New Approach to Numerical Solution of Defective Boundary Value Problems in Incompressible Fluid Dynamics. SIAM Journal on Numerical Analysis, 2008, 46, 2769-2794.	2.3	40
12	Time accurate partitioned algorithms for the solution of fluidâ€“structure interaction problems in haemodynamics. Computers and Fluids, 2013, 86, 470-482.	2.5	38
13	Large eddy simulations of blood dynamics in abdominal aortic aneurysms. Medical Engineering and Physics, 2017, 47, 38-46.	1.7	37
14	Large eddy simulations for blood dynamics in realistic stenotic carotids. International Journal for Numerical Methods in Biomedical Engineering, 2017, 33, e2868.	2.1	34
15	Multiscale Boundary Conditions for Drug Release from Cardiovascular Stents. Multiscale Modeling and Simulation, 2008, 7, 565-588.	1.6	31
16	Inexact accurate partitioned algorithms for fluidâ€“structure interaction problems with finite elasticity in haemodynamics. Journal of Computational Physics, 2014, 273, 598-617.	3.8	31
17	Computational study of the fluid-dynamics in carotids before and after endarterectomy. Journal of Biomechanics, 2016, 49, 26-38.	2.1	31
18	Reliable CFD-based estimation of flow rate in haemodynamics measures. Ultrasound in Medicine and Biology, 2006, 32, 1545-1555.	1.5	29

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19	A coupled 3Dâ€“1D numerical monodomain solver for cardiac electrical activation in the myocardium with detailed Purkinje network. Journal of Computational Physics, 2016, 308, 218-238.	3.8	29
20	Partitioned Algorithms for Fluid-Structure Interaction Problems in Haemodynamics. Milan Journal of Mathematics, 2012, 80, 443-467.	1.1	28
21	Wall Shear Stress Topological Skeleton Independently Predicts Long-Term Restenosis After Carotid Bifurcation Endarterectomy. Annals of Biomedical Engineering, 2020, 48, 2936-2949.	2.5	27
22	Shear stress alterations in the celiac trunk of patients with a continuous-flow left ventricular assist device as shown by in-silico and in-vitro flow analyses. Journal of Heart and Lung Transplantation, 2017, 36, 906-913.	0.6	26
23	An image-based computational hemodynamics study of the Systolic Anterior Motion of the mitral valve. Computers in Biology and Medicine, 2020, 123, 103922.	7.0	26
24	Impact of hemodynamics on lumen boundary displacements in abdominal aortic aneurysms by means of dynamic computed tomography and computational fluid dynamics. Biomechanics and Modeling in Mechanobiology, 2013, 12, 1263-1276.	2.8	23
25	Computational generation of the Purkinje network driven by clinical measurements: The case of pathological propagations. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 1558-1577.	2.1	23
26	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
27	3Dâ€“0D closed-loop model for the simulation of cardiac biventricular electromechanics. Computer Methods in Applied Mechanics and Engineering, 2022, 391, 114607.	6.6	23
28	A computational fluidâ€“structure interaction analysis of coronary Y-grafts. Medical Engineering and Physics, 2017, 47, 117-127.	1.7	21
29	Prediction of Long Term Restenosis Risk After Surgery in the Carotid Bifurcation by Hemodynamic and Geometric Analysis. Annals of Biomedical Engineering, 2019, 47, 1129-1140.	2.5	21
30	Numerical solution of fluid-structure interaction problems by means of a high order Discontinuous Galerkin method on polygonal grids. Finite Elements in Analysis and Design, 2019, 159, 1-14.	3.2	21
31	Nitscheâ€™s Method for Defective Boundary Value Problems in Incompressibile Fluid-dynamics. Journal of Scientific Computing, 2011, 46, 100-123.	2.3	20
32	An Unfitted Formulation for the Interaction of an Incompressible Fluid with a Thick Structure via an XFEM/DG Approach. SIAM Journal of Scientific Computing, 2018, 40, B59-B84.	2.8	20
33	Computational Comparison Between Newtonian and Non-Newtonian Blood Rheologies in Stenotic Vessels. Lecture Notes in Applied and Computational Mechanics, 2018, , 169-183.	2.2	20
34	Computational fluid dynamic comparison between patch-based and primary closure techniques after carotid endarterectomy. Journal of Vascular Surgery, 2018, 67, 887-897.	1.1	19
35	Prescription of General Defective Boundary Conditions in Fluid-Dynamics. Milan Journal of Mathematics, 2012, 80, 333-350.	1.1	17
36	Assessing the Disturbed Flow and the Transition to Turbulence in the Arteriovenous Fistula. Journal of Biomechanical Engineering, 2019, 141, .	1.3	17

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37	Computational study of the risk of restenosis in coronary bypasses. Biomechanics and Modeling in Mechanobiology, 2017, 16, 313-332.	2.8	15
38	Numerical approximation of the electromechanical coupling in the left ventricle with inclusion of the Purkinje network. International Journal for Numerical Methods in Biomedical Engineering, 2018, 34, e2984.	2.1	15
39	Analysis and optimization of the generalized Schwarz method for elliptic problems with application to fluidâ€“structure interaction. Numerische Mathematik, 2015, 131, 369-404.	1.9	13
40	Computational Fluid-Dynamic Analysis after Carotid Endarterectomy: Patch Graft versus Direct Suture Closure. Annals of Vascular Surgery, 2017, 44, 325-335.	0.9	13
41	Womersley number-based estimation of flow rate with Doppler ultrasound: Sensitivity analysis and first clinical application. Computer Methods and Programs in Biomedicine, 2010, 98, 151-160.	4.7	12
42	Image-Based Computational Hemodynamics Analysis of Systolic Obstruction in Hypertrophic Cardiomyopathy. Frontiers in Physiology, 2021, 12, 787082.	2.8	12
43	Integration of activation maps of epicardial veins in computational cardiac electrophysiology. Computers in Biology and Medicine, 2020, 127, 104047.	7.0	11
44	A Computational Fluidâ€“Structure Interaction Study for Carotids With Different Atherosclerotic Plaques. Journal of Biomechanical Engineering, 2021, 143, .	1.3	11
45	Optimized Schwarz Methods for Spherical Interfaces With Application to Fluid-Structure Interaction. SIAM Journal of Scientific Computing, 2020, 42, A751-A770.	2.8	7
46	Extended finite element method for <scp>fluidâ€structure</scp> interaction in wave membrane blood pump. International Journal for Numerical Methods in Biomedical Engineering, 2021, 37, e3467.	2.1	7
47	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
48	Image-Based Displacements Analysis and Computational Blood Dynamics after Endovascular Aneurysm Repair. Annals of Vascular Surgery, 2020, 69, 400-412.	0.9	5
49	Computational Analysis of Turbulent Hemodynamics in Radiocephalic Arteriovenous Fistulas to Determine the Best Anastomotic Angles. Annals of Vascular Surgery, 2020, 68, 451-459.	0.9	5
50	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
51	On the stability of a loosely-coupled scheme based on a Robin interface condition for fluid-structure interaction. Computers and Mathematics With Applications, 2021, 96, 109-119.	2.7	5
52	Computational Fluidâ€“Structure Interaction Study of a New Wave Membrane Blood Pump. Cardiovascular Engineering and Technology, 2022, 13, 373-392.	1.6	5
53	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
54	On the Choice of Interface Parameters in Robinâ€“Robin Loosely Coupled Schemes for Fluidâ€“Structure Interaction. Fluids, 2021, 6, 213.	1.7	3

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55	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
56	Computational electrophysiology of the coronary sinus branches based on electro-anatomical mapping for the prediction of the latest activated region. Medical and Biological Engineering and Computing, 2022, 60, 2307-2319.	2.8	2
57	Regarding â€œClosure technique after carotid endarterectomy influences local hemodynamicsâ€. Journal of Vascular Surgery, 2016, 63, 1409.	1.1	1
58	Extended Finite Elements Method for Fluid-Structure Interaction with an Immersed Thick Non-linear Structure. SEMA SIMAI Springer Series, 2018, , 209-243.	0.7	1
59	Defective Boundary Conditions for PDEs with Applications in Haemodynamics. SEMA SIMAI Springer Series, 2018, , 285-312.	0.7	0