Mariano VÃ¡zquez

List of Publications by Year
in descending order

86 papers	2,152 citations	236925 25 h-index	265206 42 g-index
95 all docs	95 docs citations	95 times ranked	1988 citing authors

#	Article	IF	Citations
1	Study protocol: MyoFit46—the cardiac sub-study of the MRC National Survey of Health and Development. BMC Cardiovascular Disorders, 2022, 22, 140.	1.7	4
2	Design and execution of a verification, validation, and uncertainty quantification plan for a numerical model of left ventricular flow after LVAD implantation. PLoS Computational Biology, 2022, 18, e1010141.	3.2	7
3	In-silico human electro-mechanical ventricular modelling and simulation for drug-induced pro-arrhythmia and inotropic risk assessment. Progress in Biophysics and Molecular Biology, 2021, 159, 58-74.	2.9	55
4	Cardiac computational modelling. Revista Espanola De Cardiologia (English Ed), 2021, 74, 65-71.	0.6	1
5	Effects of Fibre Orientation on Electrocardiographic and Mechanical Functions in a Computational Human Biventricular Model. Lecture Notes in Computer Science, 2021, , 351-361.	1.3	0
6	Human biventricular electromechanical simulations on the progression of electrocardiographic and mechanical abnormalities in post-myocardial infarction. Europace, 2021, 23, i143-i152.	1.7	15
7	Remoras pick where they stick on blue whales. Journal of Experimental Biology, 2020, 223, .	1.7	14
8	HPC compact quasi-Newton algorithm for interface problems. Journal of Fluids and Structures, 2020, 96, 103009.	3.4	10
9	Dynamic Mode Decomposition Analysis of High-Fidelity CFD Simulations of the Sinus Ventilation. Flow, Turbulence and Combustion, 2020, 105, 699-713.	2.6	9
10	Fluid–structure interaction simulations outperform computational fluid dynamics in the description of thoracic aorta haemodynamics and in the differentiation of progressive dilation in Marfan syndrome patients. Royal Society Open Science, 2020, 7, 191752.	2.4	21
11	Nasal sprayed particle deposition in a human nasal cavity under different inhalation conditions. PLoS ONE, 2019, 14, e0221330.	2.5	52
12	MPI+X: task-based parallelisation and dynamic load balance of finite element assembly. International Journal of Computational Fluid Dynamics, 2019, 33, 115-136.	1.2	10
13	Modeling the damped dynamic behavior of a flexible pendulum. Journal of Strain Analysis for Engineering Design, 2019, 54, 116-129.	1.8	10
14	Three-dimensional cardiac fibre disorganization as a novel parameter for ventricular arrhythmia stratification after myocardial infarction. Europace, 2019, 21, 822-832.	1.7	12
15	Implications of bipolar voltage mapping and magnetic resonance imaging resolution in biventricular scar characterization after myocardial infarction. Europace, 2019, 21, 163-174.	1.7	8
16	Extension of the parallel Sparse Matrix Vector Product (SpMV) for the implicit coupling of PDEs on non-matching meshes. Computers and Fluids, 2018, 173, 216-225.	2.5	11
17	Parallel mesh partitioning based on space filling curves. Computers and Fluids, 2018, 173, 264-272.	2.5	34
18	A 3D transversally isotropic constitutive model for advanced composites implemented in a high performance computing code. European Journal of Mechanics, A/Solids, 2018, 71, 278-291.	3.7	28

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19	The Effect of Partial Premixing and Heat Loss on the Reacting Flow Field Prediction of a Swirl Stabilized Gas Turbine Model Combustor. Flow, Turbulence and Combustion, 2018, 100, 503-534.	2.6	16
20	Subject-variability effects on micron particle deposition in human nasal cavities. Journal of Aerosol Science, 2018, 115, 12-28.	3.8	42
21	Fully coupled fluid–electro–mechanical model of the human heart for supercomputers. International Journal for Numerical Methods in Biomedical Engineering, 2018, 34, e3140.	2.1	92
22	Complex Congenital Heart Disease Associated With Disordered Myocardial Architecture in a Midtrimester Human Fetus. Circulation: Cardiovascular Imaging, 2018, 11, e007753.	2.6	40
23	On the chordae structure and dynamic behaviour of the mitral valve. IMA Journal of Applied Mathematics, 2018, 83, 1066-1091.	1.6	16
24	Left Ventricular Trabeculations Decrease the Wall Shear Stress and Increase the Intra-Ventricular Pressure Drop in CFD Simulations. Frontiers in Physiology, 2018, 9, 458.	2.8	29
25	Evaluating the roles of detailed endocardial structures on right ventricular haemodynamics by means of CFD simulations. International Journal for Numerical Methods in Biomedical Engineering, 2018, 34, e3115.	2.1	8
26	Heat loss prediction of a confined premixed jet flame using a conjugate heat transfer approach. International Journal of Heat and Mass Transfer, 2017, 107, 882-894.	4.8	18
27	ParaView + Alya + D8tree: Integrating High Performance Computing and High Performance Data Analytics. Procedia Computer Science, 2017, 108, 465-474.	2.0	2
28	Domain Decomposition Methods for Domain Composition Purpose: Chimera, Overset, Gluing and Sliding Mesh Methods. Archives of Computational Methods in Engineering, 2017, 24, 1033-1070.	10.2	23
29	Dynamic load balance applied to particle transport in fluids. International Journal of Computational Fluid Dynamics, 2016, 30, 408-418.	1.2	20
30	A Review of Element-Based Galerkin Methods for Numerical Weather Prediction: Finite Elements, Spectral Elements, and Discontinuous Galerkin. Archives of Computational Methods in Engineering, 2016, 23, 673-722.	10.2	44
31	Alya: Multiphysics engineering simulation toward exascale. Journal of Computational Science, 2016, 14, 15-27.	2.9	144
32	Local preconditioning and variational multiscale stabilization for Euler compressible steady flow. Computer Methods in Applied Mechanics and Engineering, 2016, 305, 468-500.	6.6	5
33	Fourier stability analysis and local Courant number of the preconditioned variational multiscale stabilization (P-VMS) for Euler compressible flow. Computer Methods in Applied Mechanics and Engineering, 2016, 301, 28-51.	6.6	4
34	Large-scale CFD simulations of the transitional and turbulent regime for the large human airways during rapid inhalation. Computers in Biology and Medicine, 2016, 69, 166-180.	7.0	89
35	Heat Transfer Effects on a Fully Premixed Methane Impinging Flame. Flow, Turbulence and Combustion, 2016, 97, 339-361.	2.6	9
36	Turbulent Combustion Modelling of a Confined Premixed Methane/Air Jet Flame Using Tabulated Chemistry. Energy Procedia, 2015, 66, 313-316.	1.8	7

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37	A gluing method for non-matching meshes. Computers and Fluids, 2015, 110, 159-168.	2.5	3
38	An XFEM/CZM implementation for massively parallel simulations of composites fracture. Composite Structures, 2015, 125, 542-557.	5.8	36
39	Alya: Computational Solid Mechanics for Supercomputers. Archives of Computational Methods in Engineering, 2015, 22, 557-576.	10.2	28
40	Parallel embedded boundary methods for fluid and rigid-body interaction. Computer Methods in Applied Mechanics and Engineering, 2015, 290, 387-419.	6.6	14
41	Turbulent combustion modelling of a confined premixed jet flame including heat loss effects using tabulated chemistry. Applied Energy, 2015, 156, 804-815.	10.1	29
42	Analysis of hemodynamics and wall mechanics at sites of cerebral aneurysm rupture. Journal of NeuroInterventional Surgery, 2015, 7, 530-536.	3.3	79
43	Fully-Coupled Electromechanical Simulations of the LV Dog Anatomy Using HPC: Model Testing and Verification. Lecture Notes in Computer Science, 2015, , 114-122.	1.3	1
44	A Chimera method for the incompressible NavierâۓStokes equations. International Journal for Numerical Methods in Fluids, 2014, 75, 155-183.	1.6	16
45	Alya Multiphysics Simulations on Intelâ€™s Xeon Phi Accelerators. Communications in Computer and Information Science, 2014, , 248-254.	0.5	1
46	Coupled analysis of unsteady aerodynamics and vehicle motion of a road vehicle in windy conditions. Computers and Fluids, 2013, 80, 1-9.	2.5	35
47	Simulations of moist convection by a variational multiscale stabilized finite element method. Journal of Computational Physics, 2013, 252, 195-218.	3.8	17
48	A Gluing Method for Non-matching Meshes. Procedia Engineering, 2013, 61, 258-263.	1.2	0
49	Parallel uniform mesh multiplication applied to a NavierâۓStokes solver. Computers and Fluids, 2013, 80, 142-151.	2.5	38
50	A parallel coupling strategy for the Chimera and domain decomposition methods in computational mechanics. Computers and Fluids, 2013, 80, 128-141.	2.5	12
51	Recent ship hydrodynamics developments in the parallel two-fluid flow solver Alya. Computers and Fluids, 2013, 80, 168-177.	2.5	6
52	A variational multiscale stabilized finite element method for the solution of the Euler equations of nonhydrostatic stratified flows. Journal of Computational Physics, 2013, 236, 380-407.	3.8	23
53	Parallel Aspects of Fluid-structure Interaction. Procedia Engineering, 2013, 61, 117-121.	1.2	2
54	A parallel finite-element method for three-dimensional controlled-source electromagnetic forward modelling. Geophysical Journal International, 2013, 193, 678-693.	2.4	126

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55	What a Difference in Biomechanics Cardiac Fiber Makes. Lecture Notes in Computer Science, 2013, , 253-260.	1.3	4
56	Two Fluids Level Set: High Performance Simulation and Post Processing. , 2012, , .		1
57	Variational multiscale stabilization of high-order spectral elements for the advection–diffusion equation. Journal of Computational Physics, 2012, 231, 7187-7213.	3.8	27
58	Coupled electromechanical model of the heart: Parallel finite element formulation. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 72-86.	2.1	80
59	Extensions of a Surface Remeshing Approach. , 2011, , .		0
60	Extension of fractional step techniques for incompressible flows: The preconditioned Orthomin(1) for the pressure Schur complement. Computers and Fluids, 2011, 44, 297-313.	2.5	48
61	MIOCARDIA. , 2011, , .		0
62	DEISA—Distributed European Infrastructure for Supercomputing Applications. Journal of Grid Computing, 2011, 9, 259-277.	3.9	23
63	Some useful strategies for unstructured edge-based solvers on shared memory machines. International Journal for Numerical Methods in Engineering, 2011, 85, 537-561.	2.8	14
64	A surface remeshing approach. International Journal for Numerical Methods in Engineering, 2011, 85, 1475-1498.	2.8	19
65	A massively parallel computational electrophysiology model of the heart. International Journal for Numerical Methods in Biomedical Engineering, 2011, 27, 1911-1929.	2.1	32
66	Total energy conservation in ALE schemes for compressible flows. European Journal of Computational Mechanics, 2010, 19, 337-363.	0.6	5
67	Application of a Galerkin Finite Element Scheme to Atmospheric Buoyant and Gravity Driven Flows. , 2010, , .		1
68	An Unstructured CFD Approach for Numerical Weather Prediction. , 2010, , .		4
69	Hybrid MPI-OpenMP performance in massively parallel computational fluid dynamics. Lecture Notes in Computational Science and Engineering, 2010, , 293-297.	0.3	0
70	Simulation of Magnetic Fluid Applied to Plastic Sorting. The Open Waste Management Journal, 2010, 3, 127-138.	2.8	1
71	A variational multiscale model for the advection–diffusion–reaction equation. Communications in Numerical Methods in Engineering, 2009, 25, 787-809.	1.3	15
72	A massively parallel fractional step solver for incompressible flows. Journal of Computational Physics, 2009, 228, 6316-6332.	3.8	78

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73	Computing the Casimir energy using the point-matching method. Physical Review D, 2009, 80, .	4.7	5
74	Dynamic analysis using finite elements to calculate the critical wear section of the contact wire in suburban railway overhead conductor rails. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2008, 222, 145-157.	2.0	9
75	Calculs de sensibilite par differentiation pour l'AÃ©rodynamique. ESAIM: Proceedings and Surveys, 2008, 22, 181-189.	0.4	1
76	A methodology for the shape optimization of flexible wings. Engineering Computations, 2006, 23, 344-367.	1.4	4
77	Multilevel optimization of a supersonic aircraft. Finite Elements in Analysis and Design, 2004, 40, 2101-2124.	3.2	22
78	The robustness issue on multigrid schemes applied to the Navierâ€"Stokes equations for laminar and turbulent, incompressible and compressible flows. International Journal for Numerical Methods in Fluids, 2004, 45, 555-579.	1.6	10
79	Automatic Differentiation for Optimum Design, Applied to Sonic Boom Reduction. Lecture Notes in Computer Science, 2003, , 85-94.	1.3	8
80	A fractional-step finite-element method for the Navierâ€"Stokes equations applied to magma-chamber withdrawal. Computers and Geosciences, 1999, 25, 263-275.	4.2	6
81	The characteristic-based-split procedure: an efficient and accurate algorithm for fluid problems. International Journal for Numerical Methods in Fluids, 1999, 31, 359-392.	1.6	167
82	Shock capturing viscosities for the general fluid mechanics algorithm. , 1998, 28, 1325-1353.		42
83	A numerical model for temporal variations during explosive central vent eruptions. Journal of Geophysical Research, 1998, 103, 20883-20899.	3.3	14
84	Braids on the PoincarÃ© section: A laser example. Physical Review E, 1996, 54, 3185-3195.	2.1	8
85	A general algorithm for compressible and incompressible flowâ€"Part II. tests on the explicit form. International Journal for Numerical Methods in Fluids, 1995, 20, 887-913.	1.6	96
86	High-Performance Computing: Dos and Donâ€™ts. , 0, , .		6