

Guillaume Houzeaux

List of Publications by Year in descending order

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116
papers

2,336
citations

218677

26
h-index

254184

43
g-index

123
all docs

123
docs citations

123
times ranked

1955
citing authors

#	ARTICLE	IF	CITATIONS
1	Alya: Multiphysics engineering simulation toward exascale. <i>Journal of Computational Science</i> , 2016, 14, 15-27.	2.9	144
2	A parallel finite-element method for three-dimensional controlled-source electromagnetic forward modelling. <i>Geophysical Journal International</i> , 2013, 193, 678-693.	2.4	126
3	Large-scale CFD simulations of the transitional and turbulent regime for the large human airways during rapid inhalation. <i>Computers in Biology and Medicine</i> , 2016, 69, 166-180.	7.0	89
4	Coupled electromechanical model of the heart: Parallel finite element formulation. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2012, 28, 72-86.	2.1	80
5	Analysis of hemodynamics and wall mechanics at sites of cerebral aneurysm rupture. <i>Journal of NeuroInterventional Surgery</i> , 2015, 7, 530-536.	3.3	79
6	A massively parallel fractional step solver for incompressible flows. <i>Journal of Computational Physics</i> , 2009, 228, 6316-6332.	3.8	78
7	A Chimera method based on a Dirichlet/Neumann(Robin) coupling for the Navier-Stokes equations. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2003, 192, 3343-3377.	6.6	70
8	The fixed-mesh ALE approach for the numerical approximation of flows in moving domains. <i>Journal of Computational Physics</i> , 2009, 228, 1591-1611.	3.8	65
9	A finite element method for the solution of rotary pumps. <i>Computers and Fluids</i> , 2007, 36, 667-679.	2.5	64
10	A low-dissipation finite element scheme for scale resolving simulations of turbulent flows. <i>Journal of Computational Physics</i> , 2019, 390, 51-65.	3.8	60
11	Nasal sprayed particle deposition in a human nasal cavity under different inhalation conditions. <i>PLoS ONE</i> , 2019, 14, e0221330.	2.5	52
12	Sensitivity analysis of a strongly-coupled human-based electromechanical cardiac model: Effect of mechanical parameters on physiologically relevant biomarkers. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2020, 361, 112762.	6.6	52
13	Dynamics of airflow in a short inhalation. <i>Journal of the Royal Society Interface</i> , 2015, 12, 20140880.	3.4	50
14	Extension of fractional step techniques for incompressible flows: The preconditioned Orthomin(1) for the pressure Schur complement. <i>Computers and Fluids</i> , 2011, 44, 297-313.	2.5	48
15	A Review of Element-Based Galerkin Methods for Numerical Weather Prediction: Finite Elements, Spectral Elements, and Discontinuous Galerkin. <i>Archives of Computational Methods in Engineering</i> , 2016, 23, 673-722.	10.2	44
16	Deflated preconditioned conjugate gradient solvers for the pressure-Poisson equation: Extensions and improvements. <i>International Journal for Numerical Methods in Engineering</i> , 2011, 87, 2-14.	2.8	43
17	Subject-variability effects on micron particle deposition in human nasal cavities. <i>Journal of Aerosol Science</i> , 2018, 115, 12-28.	3.8	42
18	Large-eddy simulations of the vortex-induced vibration of a low mass ratio two-degree-of-freedom circular cylinder at subcritical Reynolds numbers. <i>Computers and Fluids</i> , 2018, 173, 118-132.	2.5	40

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19	A variational subgrid scale model for transient incompressible flows. <i>International Journal of Computational Fluid Dynamics</i> , 2008, 22, 135-152.	1.2	38
20	Parallel uniform mesh multiplication applied to a Navier–Stokes solver. <i>Computers and Fluids</i> , 2013, 80, 142-151.	2.5	38
21	An XFEM/CZM implementation for massively parallel simulations of composites fracture. <i>Composite Structures</i> , 2015, 125, 542-557.	5.8	36
22	Flow features and micro-particle deposition in a human respiratory system during sniffing. <i>Journal of Aerosol Science</i> , 2018, 123, 171-184.	3.8	36
23	Parallel mesh partitioning based on space filling curves. <i>Computers and Fluids</i> , 2018, 173, 264-272.	2.5	34
24	Broadcast-Enabled Massive Multicore Architectures: A Wireless RF Approach. <i>IEEE Micro</i> , 2015, 35, 52-61.	1.8	33
25	A massively parallel computational electrophysiology model of the heart. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2011, 27, 1911-1929.	2.1	32
26	Algebraic multigrid preconditioning within parallel finite-element solvers for 3-D electromagnetic modelling problems in geophysics. <i>Geophysical Journal International</i> , 2014, 197, 1442-1458.	2.4	29
27	Turbulent combustion modelling of a confined premixed jet flame including heat loss effects using tabulated chemistry. <i>Applied Energy</i> , 2015, 156, 804-815.	10.1	29
28	Left Ventricular Trabeculations Decrease the Wall Shear Stress and Increase the Intra-Ventricular Pressure Drop in CFD Simulations. <i>Frontiers in Physiology</i> , 2018, 9, 458.	2.8	29
29	Alya: Computational Solid Mechanics for Supercomputers. <i>Archives of Computational Methods in Engineering</i> , 2015, 22, 557-576.	10.2	28
30	A phase-field model for ductile fracture with shear bands: A parallel implementation. <i>International Journal of Mechanical Sciences</i> , 2021, 200, 106424.	6.7	25
31	A Review of Domain Decomposition Methods for Simulation of Fluid Flows: Concepts, Algorithms, and Applications. <i>Archives of Computational Methods in Engineering</i> , 2021, 28, 841-873.	10.2	24
32	A Parallel CFD Model for Wind Farms. <i>Procedia Computer Science</i> , 2013, 18, 2157-2166.	2.0	23
33	A variational multiscale stabilized finite element method for the solution of the Euler equations of nonhydrostatic stratified flows. <i>Journal of Computational Physics</i> , 2013, 236, 380-407.	3.8	23
34	Domain Decomposition Methods for Domain Composition Purpose: Chimera, Overset, Gluing and Sliding Mesh Methods. <i>Archives of Computational Methods in Engineering</i> , 2017, 24, 1033-1070.	10.2	23
35	Heterogeneous CPU/GPU co-execution of CFD simulations on the POWER9 architecture: Application to airplane aerodynamics. <i>Future Generation Computer Systems</i> , 2020, 107, 31-48.	7.5	23
36	Dynamic load balance applied to particle transport in fluids. <i>International Journal of Computational Fluid Dynamics</i> , 2016, 30, 408-418.	1.2	20

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37	Wall-modeled large-eddy simulation in a finite element framework. <i>International Journal for Numerical Methods in Fluids</i> , 2020, 92, 20-37.	1.6	20
38	A surface remeshing approach. <i>International Journal for Numerical Methods in Engineering</i> , 2011, 85, 1475-1498.	2.8	19
39	Numerical analysis of the most appropriate heat transfer correlations for free ventilated double skin photovoltaic façades. <i>Applied Thermal Engineering</i> , 2013, 57, 57-68.	6.0	19
40	An iteration-by-subdomain overlapping Dirichlet/Robin domain decomposition method for advection-diffusion problems. <i>Journal of Computational and Applied Mathematics</i> , 2003, 158, 243-276.	2.0	18
41	A finite element model for the simulation of lost foam casting. <i>International Journal for Numerical Methods in Fluids</i> , 2004, 46, 203-226.	1.6	18
42	Heat loss prediction of a confined premixed jet flame using a conjugate heat transfer approach. <i>International Journal of Heat and Mass Transfer</i> , 2017, 107, 882-894.	4.8	18
43	Simulations of moist convection by a variational multiscale stabilized finite element method. <i>Journal of Computational Physics</i> , 2013, 252, 195-218.	3.8	17
44	Fluid-Structure Interaction Based on HPC Multicode Coupling. <i>SIAM Journal of Scientific Computing</i> , 2018, 40, C677-C703.	2.8	17
45	Transmission conditions with constraints in finite element domain decomposition methods for flow problems. <i>Communications in Numerical Methods in Engineering</i> , 2001, 17, 179-190.	1.3	16
46	A Chimera method for the incompressible Navier-Stokes equations. <i>International Journal for Numerical Methods in Fluids</i> , 2014, 75, 155-183.	1.6	16
47	The Effect of Partial Premixing and Heat Loss on the Reacting Flow Field Prediction of a Swirl Stabilized Gas Turbine Model Combustor. <i>Flow, Turbulence and Combustion</i> , 2018, 100, 503-534.	2.6	16
48	A variational multiscale model for the advection-diffusion-reaction equation. <i>Communications in Numerical Methods in Engineering</i> , 2009, 25, 787-809.	1.3	15
49	Runtime mechanisms to survive new HPC architectures: A use case in human respiratory simulations. <i>International Journal of High Performance Computing Applications</i> , 2020, 34, 42-56.	3.7	15
50	Numerical Characterization of a Premixed Hydrogen Flame Under Conditions Close to Flashback. <i>Flow, Turbulence and Combustion</i> , 2020, 104, 479-507.	2.6	15
51	Concomitant Respiratory Failure Can Impair Myocardial Oxygenation in Patients with Acute Cardiogenic Shock Supported by VA-ECMO. <i>Journal of Cardiovascular Translational Research</i> , 2022, 15, 217-226.	2.4	15
52	Some useful strategies for unstructured edge-based solvers on shared memory machines. <i>International Journal for Numerical Methods in Engineering</i> , 2011, 85, 537-561.	2.8	14
53	Parallel embedded boundary methods for fluid and rigid-body interaction. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2015, 290, 387-419.	6.6	14
54	Computational modelling of nasal respiratory flow. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2021, 24, 440-458.	1.6	14

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55	Remoras pick where they stick on blue whales. <i>Journal of Experimental Biology</i> , 2020, 223, .	1.7	14
56	Large eddy simulation of cough jet dynamics, droplet transport, and inhalability over a ten minute exposure. <i>Physics of Fluids</i> , 2021, 33, 125122.	4.0	14
57	MAGNETIC FLUID EQUIPMENT FOR SORTING SECONDARY POLYOLEFINS FROM WASTE. <i>Environmental Engineering and Management Journal</i> , 2013, 12, 951-958.	0.6	13
58	A parallel coupling strategy for the Chimera and domain decomposition methods in computational mechanics. <i>Computers and Fluids</i> , 2013, 80, 128-141.	2.5	12
59	Impact of sleeping position, gravitational force & effective tissue stiffness on obstructive sleep apnoea. <i>Journal of Biomechanics</i> , 2020, 104, 109715.	2.1	12
60	Extension of the parallel Sparse Matrix Vector Product (SpMV) for the implicit coupling of PDEs on non-matching meshes. <i>Computers and Fluids</i> , 2018, 173, 216-225.	2.5	11
61	A Generic Performance Analysis Technique Applied to Different CFD Methods for HPC. <i>International Journal of Computational Fluid Dynamics</i> , 2020, 34, 508-528.	1.2	11
62	MPI+X: task-based parallelisation and dynamic load balance of finite element assembly. <i>International Journal of Computational Fluid Dynamics</i> , 2019, 33, 115-136.	1.2	10
63	Modeling the damped dynamic behavior of a flexible pendulum. <i>Journal of Strain Analysis for Engineering Design</i> , 2019, 54, 116-129.	1.8	10
64	HPC compact quasi-Newton algorithm for interface problems. <i>Journal of Fluids and Structures</i> , 2020, 96, 103009.	3.4	10
65	Heat Transfer Effects on a Fully Premixed Methane Impinging Flame. <i>Flow, Turbulence and Combustion</i> , 2016, 97, 339-361.	2.6	9
66	Dynamic Mode Decomposition Analysis of High-Fidelity CFD Simulations of the Sinus Ventilation. <i>Flow, Turbulence and Combustion</i> , 2020, 105, 699-713.	2.6	9
67	Evaluating the roles of detailed endocardial structures on right ventricular haemodynamics by means of CFD simulations. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2018, 34, e3115.	2.1	8
68	Numerical evaluation of aerosol exhalation through nose treatment. <i>Journal of Aerosol Science</i> , 2019, 128, 1-13.	3.8	8
69	Turbulent Combustion Modelling of a Confined Premixed Methane/Air Jet Flame Using Tabulated Chemistry. <i>Energy Procedia</i> , 2015, 66, 313-316.	1.8	7
70	Benchmarking of state-of-the-art HPC Clusters with a Production CFD Code. , 2020, , .		7
71	A Dirichlet/Neumann domain decomposition method for incompressible turbulent flows on overlapping subdomains. <i>Computers and Fluids</i> , 2004, 33, 771-782.	2.5	6
72	Recent ship hydrodynamics developments in the parallel two-fluid flow solver Alya. <i>Computers and Fluids</i> , 2013, 80, 168-177.	2.5	6

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73	High-Performance Computing: Dos and Donâ€™ts. , 0, , .		6
74	On the extension of the integral length-scale approximation model to complex geometries. International Journal of Heat and Fluid Flow, 2019, 78, 108422.	2.4	6
75	Vortex induced vibrations of a pivoted finite height cylinder at low Reynolds number. Physics of Fluids, 2021, 33, .	4.0	6
76	Alya Red CCM: HPC-Based Cardiac Computational Modelling. Environmental Science and Engineering, 2015, , 189-207.	0.2	6
77	Development of a dynamic model for natural ventilated photovoltaic components and of a data driven approach to validate and identify the model parameters. Solar Energy, 2016, 129, 310-331.	6.1	5
78	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
79	Subdividing triangular and quadrilateral meshes in parallel to approximate curved geometries. Procedia Engineering, 2017, 203, 310-322.	1.2	5
80	Computational modelling of an aerosol extraction device for use in COVID-19 surgical tracheotomy. Journal of Aerosol Science, 2022, 159, 105848.	3.8	5
81	An Unstructured CFD Approach for Numerical Weather Prediction. , 2010, , .		4
82	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
83	On the formation of Taylor-Görtler structures in the vortex induced vibration phenomenon. International Journal of Heat and Fluid Flow, 2020, 83, 108573.	2.4	4
84	What a Difference in Biomechanics Cardiac Fiber Makes. Lecture Notes in Computer Science, 2013, , 253-260.	1.3	4
85	Validation of tsunami numerical simulation models for an idealized coastal industrial site. Coastal Engineering Journal, 2022, 64, 302-343.	1.9	4
86	Finite element modeling of the lost foam casting process tackling backâ€™pressure effects. International Journal of Numerical Methods for Heat and Fluid Flow, 2006, 16, 573-589.	2.8	3
87	Some Useful Strategies for Unstructured Edge-Based Solvers on Shared Memory Machines. , 2011, , .		3
88	A gluing method for non-matching meshes. Computers and Fluids, 2015, 110, 159-168.	2.5	3
89	New high performance computing software for multiphysics simulations of fusion reactors. Fusion Engineering and Design, 2018, 136, 639-644.	1.9	3
90	Dynamic resource allocation for efficient parallel CFD simulations. Computers and Fluids, 2022, 245, 105577.	2.5	3

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91	Numerical approximation of the heat transfer between domains separated by thin walls. International Journal for Numerical Methods in Fluids, 2006, 52, 963-986.	1.6	2
92	Assessing the Impact of Network Compression on Molecular Dynamics and Finite Element Methods. , 2012, , .		2
93	Real-space density functional theory and time dependent density functional theory using finite/infinite element methods. Computer Physics Communications, 2012, 183, 2581-2588.	7.5	2
94	Parallel Aspects of Fluid-structure Interaction. Procedia Engineering, 2013, 61, 117-121.	1.2	2
95	ParaView + Alya + D8tree: Integrating High Performance Computing and High Performance Data Analytics. Procedia Computer Science, 2017, 108, 465-474.	2.0	2
96	High Performance Computing Techniques in CFD. International Journal of Computational Fluid Dynamics, 2020, 34, 457-457.	1.2	2
97	Deflated Preconditioned Conjugate Gradient Solvers: Extensions and Improvements. , 2010, , .		1
98	A Surface Remeshing Approach. , 2010, , .		1
99	Application of a Galerkin Finite Element Scheme to Atmospheric Buoyant and Gravity Driven Flows. , 2010, , .		1
100	Two Fluids Level Set: High Performance Simulation and Post Processing. , 2012, , .		1
101	Parallel SFC-based mesh partitioning and load balancing. , 2019, , .		1
102	Parallel Multiphysics Coupling: Algorithmic and Computational Performances. International Journal of Computational Fluid Dynamics, 2020, 34, 486-507.	1.2	1
103	Validations of the radiation transport module NEUTRO: A deterministic solver for the neutron transport equation. Fusion Engineering and Design, 2021, 169, 112497.	1.9	1
104	Alya Multiphysics Simulations on Intel®™s Xeon Phi Accelerators. Communications in Computer and Information Science, 2014, , 248-254.	0.5	1
105	Simulación numérica de flujo sanguíneo: una herramienta útil en cirugía vascular. Angiología, 2003, 55, 55-63.	0.0	0
106	Extensions of a Surface Remeshing Approach. , 2011, , .		0
107	A Gluing Method for Non-matching Meshes. Procedia Engineering, 2013, 61, 258-263.	1.2	0
108	Implementation of discrete adjoint method for parameter sensitivity analysis in chemically reacting flows. , 2016, , .		0

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109	Hybrid MPI-OpenMP performance in massively parallel computational fluid dynamics. Lecture Notes in Computational Science and Engineering, 2010, , 293-297.	0.3	0
110	An Implicit and Parallel Chimera Type Domain Decomposition Method. Lecture Notes in Computational Science and Engineering, 2013, , 577-584.	0.3	0
111	Unveiling WARIS Code, a Parallel and Multi-purpose FDM Framework. Lecture Notes in Computational Science and Engineering, 2015, , 591-599.	0.3	0
112	GS3-4 Dynamic flow in the large airways during a rapid inhalation(GS3: Cardiovascular and) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 627 To Emerging Science and Technology in Biomechanics, 2015, 2015.8, 157.	0.0	0
113	A Parallel Implementation for Solving the Fluid and Rigid Body Interaction. Communications in Computer and Information Science, 2019, , 302-317.	0.5	0
114	Wakes and Instabilities of Static and Freely Vibrating Cylinders. ERCOFTAC Series, 2020, , 49-59.	0.1	0
115	Large-Eddy Simulation of Primary Atomization Using an Entropy Stable Conservative Level Set. ERCOFTAC Series, 2020, , 207-213.	0.1	0
116	Fluidâ€“structure interaction of human nasal valves under sniff conditions and transport of inhaled aerosols: A numerical study. Journal of Aerosol Science, 2022, 165, 106040.	3.8	0