# Alvaro L G A Coutinho

List of Publications by Year
in descending order

| | | | |
|---|---|---|---|
| 104<br>papers | 1,121<br>citations | 361045<br>20<br>h-index | 525886<br>27<br>g-index |
| 107<br>all docs | 107<br>docs citations | 107<br>times ranked | 629<br>citing authors |

| # | Article | IF | Citations |
|---|---------|-----|-----------|
| 1 | Dynamic mode decomposition in adaptive mesh refinement and coarsening simulations. Engineering With Computers, 2022, 38, 4241-4268. | 3.5 | 8 |
| 2 | Coupled and uncoupled dynamic mode decomposition in multi-compartmental systems with applications to epidemiological and additive manufacturing problems. Computer Methods in Applied Mechanics and Engineering, 2022, 391, 114600. | 3.4 | 18 |
| 3 | Comparing the convected level-set and the Allenâ€"Cahn phase-field methods in AMR/C simulations of two-phase flows. Computers and Fluids, 2022, 244, 105569. | 1.3 | 3 |
| 4 | Data-Driven Simulation of Fisherâ€"Kolmogorov Tumor Growth Models Using Dynamic Mode Decomposition. Journal of Biomechanical Engineering, 2022, 144, . | 0.6 | 3 |
| 5 | Adaptive mesh refinement and coarsening for diffusionâ€"reaction epidemiological models. Computational Mechanics, 2021, 67, 1177-1199. | 2.2 | 16 |
| 6 | An encoder-decoder deep surrogate for reverse time migration in seismic imaging under uncertainty. Computational Geosciences, 2021, 25, 1229-1250. | 1.2 | 3 |
| 7 | Finite element solution of nonlocal Cahnâ€"Hilliard equations with feedback control time step size adaptivity. International Journal for Numerical Methods in Engineering, 2021, 122, 5028-5052. | 1.5 | 0 |
| 8 | Assessing the Spatio-temporal Spread of COVID-19 via Compartmental Models with Diffusion in Italy, USA, and Brazil. Archives of Computational Methods in Engineering, 2021, 28, 1-19. | 6.0 | 18 |
| 9 | Data reduction in scientific workflows using provenance monitoring and user steering. Future Generation Computer Systems, 2020, 110, 481-501. | 4.9 | 10 |
| 10 | Adding domain data to code profiling tools to debug workflow parallel execution. Future Generation Computer Systems, 2020, 110, 422-439. | 4.9 | 2 |
| 11 | Residual-based variational multiscale 2D simulation of sediment transport with morphological changes. Computers and Fluids, 2020, 196, 104312. | 1.3 | 2 |
| 12 | A workflow for seismic imaging with quantified uncertainty. Computers and Geosciences, 2020, 145, 104615. | 2.0 | 8 |
| 13 | A new convected level-set method for gas bubble dynamics. Computers and Fluids, 2020, 209, 104667. | 1.3 | 18 |
| 14 | DfAnalyzer: Runtime dataflow analysis tool for Computational Science and Engineering applications. SoftwareX, 2020, 12, 100592. | 1.2 | 9 |
| 15 | EdgeCFD: a parallel residual-based variational multiscale code for multiphysics. International Journal of Computational Fluid Dynamics, 2020, 34, 529-548. | 0.5 | 0 |
| 16 | A shallow water eventâ€"driven approach to simulate turbidity currents at stratigraphic scale. International Journal for Numerical Methods in Fluids, 2020, 92, 1290-1321. | 0.9 | 0 |
| 17 | Keeping track of user steering actions in dynamic workflows. Future Generation Computer Systems, 2019, 99, 624-643. | 4.9 | 10 |
| 18 | Finite element simulation of complex dense granular flows using a well-posed regularization of the Î¼(I)-rheology. Computers and Fluids, 2019, 188, 102-113. | 1.3 | 16 |

| # | Article | IF | Citations |
|---|---------|----|-----------| 
| 19 | Communicationâ€"Free Parallel Mesh Multiplication for Large Scale Simulations. Lecture Notes in Computer Science, 2019, , 3-15. | 1.0 | 1 |
| 20 | A staggered procedure for fluidâ€"object interaction with free surfaces, large rotations and driven by adaptive time stepping. Journal of the Brazilian Society of Mechanical Sciences and Engineering, 2018, 40, 1. | 0.8 | 4 |
| 21 | A parameter-free dynamic diffusion method for advectionâ€"diffusionâ€"reaction problems. Computers and Mathematics With Applications, 2018, 75, 307-321. | 1.4 | 8 |
| 22 | In situ visualization and data analysis for turbidity currents simulation. Computers and Geosciences, 2018, 110, 23-31. | 2.0 | 24 |
| 23 | Capturing Provenance for Runtime Data Analysis in Computational Science and Engineering Applications. Lecture Notes in Computer Science, 2018, , 183-187. | 1.0 | 4 |
| 24 | Bayesian assessment of uncertainty in viscosity closure models for turbidity currents computations. Computer Methods in Applied Mechanics and Engineering, 2018, 342, 653-673. | 3.4 | 5 |
| 25 | A hybrid FEM-DEM approach to the simulation of fluid flow laden with many particles. Computational Particle Mechanics, 2017, 4, 213-227. | 1.5 | 8 |
| 26 | Raw data queries during data-intensive parallel workflow execution. Future Generation Computer Systems, 2017, 75, 402-422. | 4.9 | 20 |
| 27 | Green water loads on FPSOs exposed to beam and quartering seas, part I: Experimental tests. Ocean Engineering, 2017, 140, 419-433. | 1.9 | 23 |
| 28 | Green water loads on FPSOs exposed to beam and quartering seas, Part II: CFD simulations. Ocean Engineering, 2017, 140, 434-452. | 1.9 | 32 |
| 29 | Enhancing Energy Production with Exascale HPC Methods. Communications in Computer and Information Science, 2017, , 233-246. | 0.4 | 0 |
| 30 | Fostering Collaboration in Energy Research and Technological Developments Applying New Exascale HPC Techniques. , 2016, , . | | 1 |
| 31 | Uncertainty quantification in numerical simulation of particle-laden flows. Computational Geosciences, 2016, 20, 265-281. | 1.2 | 6 |
| 32 | Deflated preconditioned conjugate gradients applied to a Petrov-Galerkin generalized least squares finite element formulation for incompressible flows with heat transfer. International Journal of Numerical Methods for Heat and Fluid Flow, 2015, 25, 272-298. | 1.6 | 1 |
| 33 | Data-centric iteration in dynamic workflows. Future Generation Computer Systems, 2015, 46, 114-126. | 4.9 | 20 |
| 34 | Practical implementation aspects of Galerkin reduced order models based on proper orthogonal decomposition for computational fluid dynamics. Journal of the Brazilian Society of Mechanical Sciences and Engineering, 2015, 37, 1309-1327. | 0.8 | 1 |
| 35 | Recent advances in EdgeCFD on wave-structure interaction and turbulence modeling. Marine Systems and Ocean Technology, 2014, 9, 49-58. | 0.5 | 0 |
| 36 | Impact of tetrahedralization on parallel conforming octree mesh generation. International Journal for Numerical Methods in Fluids, 2014, 75, 800-814. | 0.9 | 2 |

| # | Article | IF | Citations |
|---|---------|-----|-----------|
| 37 | Parallel implementation and performance analysis of a linear octree finite element mesh generation scheme. Concurrency Computation Practice and Experience, 2013, 25, 826-842. | 1.4 | 8 |
| 38 | Leopoldo Luis Cabo Penna Franca (April 7th, 1959–September 19th, 2012). Computer Methods in Applied Mechanics and Engineering, 2013, 254, A1. | 3.4 | 0 |
| 39 | Parallel adaptive simulation of gravity currents on the lock-exchange problem. Computers and Fluids, 2013, 88, 782-794. | 1.3 | 12 |
| 40 | Numerical simulation of particle‐laden flows by the residual‐based variational multiscale method. International Journal for Numerical Methods in Fluids, 2013, 73, 729-749. | 0.9 | 6 |
| 41 | A Stabilized Edge-Based Finite Element Approach to Wave-Structure Interaction Assessment. , 2013, , . | | 1 |
| 42 | EdgeCFD-ALE: A Stabilized Finite Element System for Fluid-Structure Interaction in Offshore Engineering. , 2012, , . | | 1 |
| 43 | UNCERTAINTY QUANTIFICATION IN COMPUTATIONAL PREDICTIVE MODELS FOR FLUID DYNAMICS USING A WORKFLOW MANAGEMENT ENGINE. , 2012, 2, 53-71. | | 12 |
| 44 | Reordering and incomplete preconditioning in serial and parallel adaptive mesh refinement and coarsening flow solutions. International Journal for Numerical Methods in Fluids, 2012, 69, 802-823. | 0.9 | 12 |
| 45 | Parallel Adaptive Simulation of Coupled Incompressible Viscous Flow and Advective-Diffusive Transport Using Stabilized FEM Formulation. CLEI Electronic Journal, 2012, 15, . | 0.2 | 1 |
| 46 | Supporting dynamic parameter sweep in adaptive and user-steered workflow. , 2011, , . | | 15 |
| 47 | Multiple cardinality constraints and automatic member grouping in the optimal design of steel framed structures. Engineering Structures, 2011, 33, 433-444. | 2.6 | 17 |
| 48 | Evaluation of Message Passing Communication Patterns in Finite Element Solution of Coupled Problems. Lecture Notes in Computer Science, 2011, , 306-313. | 1.0 | 4 |
| 49 | On the Vectorization of Engineering Codes Using Multimedia Instructions. Lecture Notes in Computer Science, 2011, , 263-270. | 1.0 | 0 |
| 50 | A stabilized method for transient transport equations. Computational Mechanics, 2010, 46, 199-204. | 2.2 | 11 |
| 51 | Residual-based variational multiscale simulation of free surface flows. Computational Mechanics, 2010, 46, 545-557. | 2.2 | 27 |
| 52 | Finite element simulation of viscous fingering in miscible displacements at high mobility-ratios. Journal of the Brazilian Society of Mechanical Sciences and Engineering, 2010, 32, 292-299. | 0.8 | 15 |
| 53 | Parallel Linear Octree Meshing with Immersed Surfaces. , 2010, , . | | 6 |
| 54 | Computational Simulation of Free Surface Flows Using Stabilized Edge-Based Finite Element Method. , 2010, , . | | 1 |

| # | Article | IF | Citations |
|---|---------|----|-----------|
| 55 | Computational Techniques for Stabilized Edge-Based Finite Element Simulation of Nonlinear Free-Surface Flows. Journal of Offshore Mechanics and Arctic Engineering, 2009, 131, . | 0.6 | 4 |
| 56 | Three-Dimensional Edge-Based SUPG Computation of Inviscid Compressible Flows With YZβ Shock-Capturing. Journal of Applied Mechanics, Transactions ASME, 2009, 76, . | 1.1 | 20 |
| 57 | Energy Flux to a Cyclonic Eddy off Cabo Frio, Brazil. Journal of Physical Oceanography, 2009, 39, 2999-3010. | 0.7 | 20 |
| 58 | Edgeâ€based finite element implementation of the residualâ€based variational multiscale method. International Journal for Numerical Methods in Fluids, 2009, 61, 1-22. | 0.9 | 19 |
| 59 | Progressive Wave Simulation Using Stabilized Edge-Based Finite Element Methods. , 2009, , . | | 0 |
| 60 | Stabilized edgeâ€based finite element computation of gravity currents in lockâ€exchange configurations. International Journal for Numerical Methods in Fluids, 2008, 57, 1137-1152. | 0.9 | 22 |
| 61 | 14th International Conference on Finite Elements in Flow Problems. International Journal for Numerical Methods in Fluids, 2008, 57, 1047-1050. | 0.9 | 0 |
| 62 | On the Implementation of Boundary Element Engineering Codes on the Cell Broadband Engine. Lecture Notes in Computer Science, 2008, , 490-504. | 1.0 | 1 |
| 63 | Computational Techniques for Stabilized Edge-Based Finite Element Simulation of Free-Surface Flows. , 2008, , . | | 1 |
| 64 | Simple finite element-based computation of distance functions in unstructured grids. International Journal for Numerical Methods in Engineering, 2007, 72, 1095-1110. | 1.5 | 38 |
| 65 | Edge-based data structures for a symmetric stabilized finite element method for the incompressible Navierâ€"Stokes equations with heat transfer. International Journal for Numerical Methods in Fluids, 2007, 53, 1473-1494. | 0.9 | 3 |
| 66 | Stabilized edge-based finite element simulation of free-surface flows. International Journal for Numerical Methods in Fluids, 2007, 54, 965-993. | 0.9 | 68 |
| 67 | Ibero-Latin American Conference on Computational Methods in Engineering CILAMCE 2005. Communications in Numerical Methods in Engineering, 2007, 23, 417-417. | 1.3 | 0 |
| 68 | Inexact Newton-type methods for the solution of steady incompressible viscoplastic flows with the SUPG/PSPG finite element formulation. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 3145-3167. | 3.4 | 10 |
| 69 | Parallel edge-based solution of viscoplastic flows with the SUPG/PSPG formulation. Computational Mechanics, 2006, 38, 365-381. | 2.2 | 26 |
| 70 | Compressible Flow SUPG Stabilization Parameters Computed from Degree-of-freedom Submatrices. Computational Mechanics, 2006, 38, 334-343. | 2.2 | 35 |
| 71 | Performance comparison of data-reordering algorithms for sparse matrixâ€"vector multiplication in edge-based unstructured grid computations. International Journal for Numerical Methods in Engineering, 2006, 66, 431-460. | 1.5 | 27 |
| 72 | Performance of LCD iterative method in the finite element and finite difference solution of convection-diffusion equations. Communications in Numerical Methods in Engineering, 2006, 22, 643-656. | 1.3 | 5 |

| # | Article | IF | Citations |
|---|---------|----|-----------|
| 73 | EdgePack: A Parallel Vertex and Node Reordering Package for Optimizing Edge-Based Computations in Unstructured Grids. , 2006, , 292-304. | | 2 |
| 74 | Fast Numerical Simulation of Porous Media Flows. , 2006, , 589-589. | | 0 |
| 75 | A posteriori error estimate for stress analysis of homogeneous and heterogeneous materials: An engineering approach. Finite Elements in Analysis and Design, 2005, 42, 171-188. | 1.7 | 2 |
| 76 | Control strategies for timestep selection in finite element simulation of incompressible flows and coupled reaction-convection-diffusion processes. International Journal for Numerical Methods in Fluids, 2005, 47, 201-231. | 0.9 | 43 |
| 77 | Compressible flow SUPG parameters computed from element matrices. Communications in Numerical Methods in Engineering, 2005, 21, 465-476. | 1.3 | 30 |
| 78 | Edge-based adaptive implicit/explicit finite element procedures for three-dimensional transport problems. Communications in Numerical Methods in Engineering, 2005, 21, 545-552. | 1.3 | 2 |
| 79 | Parallel Boundary Elements: A Portable 3-D Elastostatic Implementation for Shared Memory Systems. Lecture Notes in Computer Science, 2005, , 514-526. | 1.0 | 2 |
| 80 | On the parallelization of boundary element codes using standard and portable libraries. Engineering Analysis With Boundary Elements, 2004, 28, 893-902. | 2.0 | 16 |
| 81 | A stabilized finite element procedure for turbulent fluidâ€"structure interaction using adaptive timeâ€"space refinement. International Journal for Numerical Methods in Fluids, 2004, 44, 673-693. | 0.9 | 28 |
| 82 | Evaluating the LCD algorithm for solving linear systems of equations arising from implicit SUPG formulation of compressible flows. International Journal for Numerical Methods in Engineering, 2004, 60, 1513-1534. | 1.5 | 5 |
| 83 | Simple zero thickness kinematically consistent interface elements. Computers and Geotechnics, 2003, 30, 347-374. | 2.3 | 32 |
| 84 | Edge-Based Interface Elements for Solution of Three- Dimensional Geomechanical Problems. Lecture Notes in Computer Science, 2003, , 53-64. | 1.0 | 3 |
| 85 | Parallel Implementation for Probabilistic Analysis of 3D Discrete Cracking in Concrete. Lecture Notes in Computer Science, 2003, , 79-93. | 1.0 | 0 |
| 86 | Improving convergence to steady state of implicit SUPG solution of Euler equations. Communications in Numerical Methods in Engineering, 2002, 18, 345-353. | 1.3 | 9 |
| 87 | Implicit SUPG solution of Euler equations using edge-based data structures. Computer Methods in Applied Mechanics and Engineering, 2002, 191, 3477-3490. | 3.4 | 24 |
| 88 | Edge-based finite element techniques for non-linear solid mechanics problems. International Journal for Numerical Methods in Engineering, 2001, 50, 2053-2068. | 1.5 | 20 |
| 89 | Miscible displacement simulation by finite element methods in distributed memory machines. Computer Methods in Applied Mechanics and Engineering, 1999, 174, 339-354. | 3.4 | 15 |
| 90 | Iterative local solvers for distributed Krylov-Schwarz method applied to convection-diffusion problems. Computer Methods in Applied Mechanics and Engineering, 1997, 149, 353-362. | 3.4 | 6 |

| # | Article | IF | Citations |
|---|---|---|---|
| 91 | Parallel Finite Element Simulation of Miscible Displacements in Porous Media. SPE Journal, 1996, 1, 487-500. | 1.7 | 9 |
| 92 | Multi-level hierarchical preconditioners for boundary element systems. Engineering Analysis With Boundary Elements, 1993, 12, 103-109. | 2.0 | 15 |
| 93 | Iterative solution of bem equations by GMRES algorithm. Computers and Structures, 1992, 44, 1249-1253. | 2.4 | 37 |
| 94 | A study of implementation schemes for vectorized sparse EBE matrix-vector multiplication. Advances in Engineering Software and Workstations, 1991, 13, 130-134. | 0.2 | 6 |
| 95 | Conjugate gradient solution of finite element equations on the IBM 3090 vector computer utilizing polynomial preconditionings. Computer Methods in Applied Mechanics and Engineering, 1990, 84, 129-145. | 3.4 | 11 |
| 96 | Modal solution of transient heat conduction utilizing Lanczos algorithm. International Journal for Numerical Methods in Engineering, 1989, 28, 13-25. | 1.5 | 8 |
| 97 | Nonlinear dynamic analysis using the pseudo-force method and the Lanczos algorithm. Computers and Structures, 1988, 30, 979-983. | 2.4 | 7 |
| 98 | On the application of an element-by-element lanczos solver to large offshore structural engineering problems. Computers and Structures, 1987, 27, 27-37. | 2.4 | 6 |
| 99 | The application of the Lanczos Mode Superposition Method in dynamic analysis of offshore structures. Computers and Structures, 1987, 25, 615-625. | 2.4 | 16 |
| 100 | Dynamic Substructure Analysis Using Enhanced Lanczos-Ritz Vectors. , 1987, , 349-355. | | 0 |
| 101 | Multiscale Dynamic Diffusion Method to Solve Advection-Diffusion-Reaction Problems. , 0, , . | | 2 |
| 102 | Modelling particle-laden turbulent flows with parametric uncertainties. , 0, , . | | 0 |
| 103 | Simulation of a collapsing column for dense granular flows. Anais Do ... Congresso Ibero-Latino-Americano De MÃ©todos Computacionais Em Engenharia, 0, , . | 0.0 | 0 |
| 104 | Residual-based variational multiscale simulation of erosion using libMesh. Anais Do ... Congresso Ibero-Latino-Americano De MÃ©todos Computacionais Em Engenharia, 0, , . | 0.0 | 0 |