Lisandro Dalcin

List of Publications by Year
in descending order

66 papers	2,950 citations	304743 22 h-index	175258 52 g-index
67 all docs	67 docs citations	67 times ranked	3239 citing authors

#	Article	IF	Citations
1	Cython: The Best of Both Worlds. Computing in Science and Engineering, 2011, 13, 31-39.	1.2	745
2	Parallel distributed computing using Python. Advances in Water Resources, 2011, 34, 1124-1139.	3.8	350
3	MPI for Python. Journal of Parallel and Distributed Computing, 2005, 65, 1108-1115.	4.1	279
4	MPI for Python: Performance improvements and MPI-2 extensions. Journal of Parallel and Distributed Computing, 2008, 68, 655-662.	4.1	234
5	PetIGA: A framework for high-performance isogeometric analysis. Computer Methods in Applied Mechanics and Engineering, 2016, 308, 151-181.	6.6	114
6	mpi4py: Status Update After 12 Years of Development. Computing in Science and Engineering, 2021, 23, 47-54.	1.2	102
7	The cost of continuity: A study of the performance of isogeometric finite elements using direct solvers. Computer Methods in Applied Mechanics and Engineering, 2012, 213-216, 353-361.	6.6	99
8	Relaxation Runge--Kutta Methods: Fully Discrete Explicit Entropy-Stable Schemes for the Compressible Euler and Navier--Stokes Equations. SIAM Journal of Scientific Computing, 2020, 42, A612-A638.	2.8	75
9	The Cost of Continuity: Performance of Iterative Solvers on Isogeometric Finite Elements. SIAM Journal of Scientific Computing, 2013, 35, A767-A784.	2.8	66
10	SUPG and discontinuity-capturing methods for coupled fluid mechanics and electrochemical transport problems. Computational Mechanics, 2013, 51, 171-185.	4.0	55
11	An energy-stable convex splitting for the phase-field crystal equation. Computers and Structures, 2015, 158, 355-368.	4.4	48
12	Fast parallel multidimensional FFT using advanced MPI. Journal of Parallel and Distributed Computing, 2019, 128, 137-150.	4.1	37
13	Dynamics with Matrices Possessing Kronecker Product Structure. Procedia Computer Science, 2015, 51, 286-295.	2.0	29
14	PetIGA-MF: A multi-field high-performance toolbox for structure-preserving B-splines spaces. Journal of Computational Science, 2017, 18, 117-131.	2.9	29
15	Strong coupling strategy for fluidâ€"structure interaction problems in supersonic regime via fixed point iteration. Journal of Sound and Vibration, 2009, 320, 859-877.	3.9	27
16	Non-body-fitted fluidâ€"structure interaction: Divergence-conforming B-splines, fully-implicit dynamics, and variational formulation. Journal of Computational Physics, 2018, 374, 625-653.	3.8	27
17	The value of continuity: Refined isogeometric analysis and fast direct solvers. Computer Methods in Applied Mechanics and Engineering, 2017, 316, 586-605.	6.6	26
18	Conservative and entropy stable solid wall boundary conditions for the compressible Navierâ€"Stokes equations: Adiabatic wall and heat entropy transfer. Journal of Computational Physics, 2019, 397, 108775.	3.8	26

#	Article	IF	Citations
19	Energy exchange analysis in droplet dynamics via the Navierâ€“Stokesâ€“Cahnâ€“Hilliard model. Journal of Fluid Mechanics, 2016, 797, 389-430.	3.4	25
20	Fully discrete explicit locally entropy-stable schemes for the compressible Euler and Navierâ€“Stokes equations. Computers and Mathematics With Applications, 2020, 80, 1343-1359.	2.7	25
21	An energy-stable generalized-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" id="mml42" display="inline" overflow="scroll" altimg="si42.gif"><mml:mi>Î±</mml:mi></mml:math> method for the Swiftâ€“Hohenberg equation. Journal of Computational and Applied Mathematics, 2018, 344, 836-851.	2.0	23
22	On the computational efficiency of isogeometric methods for smooth elliptic problems using direct solvers. International Journal for Numerical Methods in Engineering, 2014, 100, 620-632.	2.8	22
23	An energy-stable time-integrator for phase-field models. Computer Methods in Applied Mechanics and Engineering, 2017, 316, 1179-1214.	6.6	22
24	High-order accurate entropy-stable discontinuous collocated Galerkin methods with the summation-by-parts property for compressible CFD frameworks: Scalable SSDC algorithms and flow solver. Journal of Computational Physics, 2021, 424, 109844.	3.8	22
25	A survey on direct solvers for Galerkin methods. BoletÃn De La Sociedad EspaÃ‘ola De MatemÃ¡tica Aplicada, 2012, 57, 107-134.	0.9	21
26	Coupling Navier-stokes and Cahn-hilliard Equations in a Two-dimensional Annular flow Configuration. Procedia Computer Science, 2015, 51, 934-943.	2.0	20
27	Performance evaluation of block-diagonal preconditioners for the divergence-conforming B-spline discretization of the Stokes system. Journal of Computational Science, 2015, 11, 123-136.	2.9	19
28	On the robustness and performance of entropy stable collocated discontinuous Galerkin methods. Journal of Computational Physics, 2021, 426, 109891.	3.8	19
29	A NURBSâ€based finite element model applied to geometrically nonlinear elastodynamics using a corotational approach. International Journal for Numerical Methods in Engineering, 2015, 102, 1839-1868.	2.8	18
30	High performance simulations of electrokinetic flow and transport in microfluidic chips. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 2360-2367.	6.6	16
31	Computational cost of isogeometric multi-frontal solvers on parallel distributed memory machines. Computer Methods in Applied Mechanics and Engineering, 2015, 284, 971-987.	6.6	16
32	Parallel Fast Isogeometric Solvers for Explicit Dynamics. Computing and Informatics, 2017, 36, 423-448.	0.7	16
33	Dynamic boundary conditions in computational fluid dynamics. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 1219-1232.	6.6	14
34	Impact of element-level static condensation on iterative solver performance. Computers and Mathematics With Applications, 2015, 70, 2331-2341.	2.7	11
35	On the thermodynamics of the Swiftâ€“Hohenberg theory. Continuum Mechanics and Thermodynamics, 2017, 29, 1335-1345.	2.2	10
36	Refined Isogeometric Analysis for a preconditioned conjugate gradient solver. Computer Methods in Applied Mechanics and Engineering, 2018, 335, 490-509.	6.6	10

#	Article	IF	Citations
37	Optimized Runge-Kutta Methods with Automatic Step Size Control for Compressible Computational Fluid Dynamics. Communications on Applied Mathematics and Computation, 2022, 4, 1191-1228.	1.7	10
38	Objectivity tests for Navierâ€“Stokes simulations: The revealing of non-physical solutions produced by Laplace formulations. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 4180-4192.	6.6	9
39	On Round-off Error for Adaptive Finite Element Methods. Procedia Computer Science, 2012, 9, 1474-1483.	2.0	9
40	A FFT preconditioning technique for the solution of incompressible flow on GPUs. Computers and Fluids, 2013, 74, 44-57.	2.5	8
41	Time adaptivity in the diffusive wave approximation to the shallow water equations. Journal of Computational Science, 2013, 4, 152-156.	2.9	8
42	A scalable block-preconditioning strategy for divergence-conforming B-spline discretizations of the Stokes problem. Computer Methods in Applied Mechanics and Engineering, 2017, 316, 839-858.	6.6	8
43	Optimized geometrical metrics satisfying free-stream preservation. Computers and Fluids, 2020, 207, 104555.	2.5	8
44	Entropy-stable p-nonconforming discretizations with the summation-by-parts property for the compressible Navierâ€“Stokes equations. Computers and Fluids, 2020, 210, 104631.	2.5	8
45	Reactive n-species Cahnâ€“Hilliard system: A thermodynamically-consistent model for reversible chemical reactions. Journal of Computational and Applied Mathematics, 2019, 350, 143-154.	2.0	7
46	Performance study of sustained petascale direct numerical simulation on Cray XC40 systems. Concurrency Computation Practice and Experience, 2020, 32, e5725.	2.2	7
47	Entropy stable h/p-nonconforming discretization with the summation-by-parts property for the compressible Euler and Navierâ€“Stokes equations. SN Partial Differential Equations and Applications, 2020, 1, 1.	0.6	7
48	Diffusive Wave Approximation to the Shallow Water Equations: Computational Approach. Procedia Computer Science, 2011, 4, 1828-1833.	2.0	6
49	A preconditioner for the Schur complement matrix. Advances in Engineering Software, 2006, 37, 754-762.	3.8	5
50	GPGPU implementation of the BFECC algorithm for pure advection equations. Cluster Computing, 2014, 17, 243-254.	5.0	5
51	Modeling Phase-transitions Using a High-performance, Isogeometric Analysis Framework. Procedia Computer Science, 2014, 29, 980-990.	2.0	5
52	Micropolar Fluids Using B-spline Divergence Conforming Spaces. Procedia Computer Science, 2014, 29, 991-1001.	2.0	5
53	A New Time Integration Scheme for Cahn-hilliard Equations. Procedia Computer Science, 2015, 51, 1003-1012.	2.0	3
54	Optimized Explicit Runge-Kutta Schemes for Entropy Stable Discontinuous Collocated Methods Applied to the Euler and Navierâ€“Stokes equations. , 2021, , .		3

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55	Solving Nonlinear,ÂHigh-Order Partial Differential Equations Using a High-Performance Isogeometric Analysis Framework. Communications in Computer and Information Science, 2014, , 236-247.	0.5	3
56	mpi4py-fft: Parallel Fast Fourier Transforms with MPI for Python. Journal of Open Source Software, 2019, 4, 1340.	4.6	3
57	Isogeometric Shell Formulation based on a Classical Shell Model. , 0, , .		3
58	On the performance of relaxation and adaptive explicit Rungeâ€“Kutta schemes for high-order compressible flow simulations. Journal of Computational Physics, 2022, 464, 111333.	3.8	3
59	FastMat: A C++ library for multi-index array computations. Advances in Engineering Software, 2012, 54, 38-48.	3.8	2
60	Telescopic Hybrid Fast Solver for 3D Elliptic Problems with Point Singularities. Procedia Computer Science, 2015, 51, 2744-2748.	2.0	2
61	Entropy Stable No-Slip Wall Boundary Conditions for the Eulerian Model for Viscous and Heat Conducting Compressible Flows. , 2021, , .		2
62	Development and analysis of entropy stable no-slip wall boundary conditions for the Eulerian model for viscous and heat conducting compressible flows. SN Partial Differential Equations and Applications, 2021, 2, 1.	0.6	2
63	Performance analysis of relaxation Rungeâ€“Kutta methods. International Journal of High Performance Computing Applications, 2022, 36, 524-542.	3.7	2
64	Optimized explicit Rungeâ€“Kutta schemes for high-order collocated discontinuous Galerkin methods for compressible fluid dynamics. Computers and Mathematics With Applications, 2022, 118, 1-17.	2.7	2
65	Simulation of Turbulent Flows Using a Fully Discrete Explicit <i>hp</i>-nonconforming Entropy Stable Solver of Any Order on Unstructured Grids. , 2021, , .		1
66	Implications of Reduced Communication Precision in a Collocated Discontinuous Galerkin Finite Element Framework. , 2021, , .		0