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	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
2	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
3	Performance analysis of relaxation Rungeâ€“Kutta methods. International Journal of High Performance Computing Applications, 2022, 36, 524-542.	3.7	2
4	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
5	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
6	On the robustness and performance of entropy stable collocated discontinuous Galerkin methods. Journal of Computational Physics, 2021, 426, 109891.	3.8	19
7	Simulation of Turbulent Flows Using a Fully Discrete Explicit <i>hp</i>-nonconforming Entropy Stable Solver of Any Order on Unstructured Grids. , 2021, , .		1
8	Optimized Explicit Runge-Kutta Schemes for Entropy Stable Discontinuous Collocated Methods Applied to the Euler and Navierâ€“Stokes equations. , 2021, , .		3
9	Entropy Stable No-Slip Wall Boundary Conditions for the Eulerian Model for Viscous and Heat Conducting Compressible Flows. , 2021, , .		2
10	mpi4py: Status Update After 12 Years of Development. Computing in Science and Engineering, 2021, 23, 47-54.	1.2	102
11	Implications of Reduced Communication Precision in a Collocated Discontinuous Galerkin Finite Element Framework. , 2021, , .		0
12	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
13	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
14	Optimized geometrical metrics satisfying free-stream preservation. Computers and Fluids, 2020, 207, 104555.	2.5	8
15	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
16	Performance study of sustained petascale direct numerical simulation on Cray XC40 systems. Concurrency Computation Practice and Experience, 2020, 32, e5725.	2.2	7
17	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
18	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

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19	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
20	Fast parallel multidimensional FFT using advanced MPI. Journal of Parallel and Distributed Computing, 2019, 128, 137-150.	4.1	37
21	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
22	mpi4py-fft: Parallel Fast Fourier Transforms with MPI for Python. Journal of Open Source Software, 2019, 4, 1340.	4.6	3
23	Refined Isogeometric Analysis for a preconditioned conjugate gradient solver. Computer Methods in Applied Mechanics and Engineering, 2018, 335, 490-509.	6.6	10
24	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
25	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
26	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
27	An energy-stable time-integrator for phase-field models. Computer Methods in Applied Mechanics and Engineering, 2017, 316, 1179-1214.	6.6	22
28	On the thermodynamics of the Swiftâ€“Hohenberg theory. Continuum Mechanics and Thermodynamics, 2017, 29, 1335-1345.	2.2	10
29	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
30	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
31	Parallel Fast Isogeometric Solvers for Explicit Dynamics. Computing and Informatics, 2017, 36, 423-448.	0.7	16
32	Energy exchange analysis in droplet dynamics via the Navierâ€“Stokesâ€“Cahnâ€“Hilliard model. Journal of Fluid Mechanics, 2016, 797, 389-430.	3.4	25
33	PetIGA: A framework for high-performance isogeometric analysis. Computer Methods in Applied Mechanics and Engineering, 2016, 308, 151-181.	6.6	114
34	Dynamics with Matrices Possessing Kronecker Product Structure. Procedia Computer Science, 2015, 51, 286-295.	2.0	29
35	Telescopic Hybrid Fast Solver for 3D Elliptic Problems with Point Singularities. Procedia Computer Science, 2015, 51, 2744-2748.	2.0	2
36	Impact of element-level static condensation on iterative solver performance. Computers and Mathematics With Applications, 2015, 70, 2331-2341.	2.7	11

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37	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
38	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
39	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
40	A New Time Integration Scheme for Cahn-hilliard Equations. Procedia Computer Science, 2015, 51, 1003-1012.	2.0	3
41	Coupling Navier-stokes and Cahn-hilliard Equations in a Two-dimensional Annular flow Configuration. Procedia Computer Science, 2015, 51, 934-943.	2.0	20
42	An energy-stable convex splitting for the phase-field crystal equation. Computers and Structures, 2015, 158, 355-368.	4.4	48
43	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
44	GPGPU implementation of the BFECC algorithm for pure advection equations. Cluster Computing, 2014, 17, 243-254.	5.0	5
45	Modeling Phase-transitions Using a High-performance, Isogeometric Analysis Framework. Procedia Computer Science, 2014, 29, 980-990.	2.0	5
46	Micropolar Fluids Using B-spline Divergence Conforming Spaces. Procedia Computer Science, 2014, 29, 991-1001.	2.0	5
47	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
48	SUPG and discontinuity-capturing methods for coupled fluid mechanics and electrochemical transport problems. Computational Mechanics, 2013, 51, 171-185.	4.0	55
49	A FFT preconditioning technique for the solution of incompressible flow on GPUs. Computers and Fluids, 2013, 74, 44-57.	2.5	8
50	The Cost of Continuity: Performance of Iterative Solvers on Isogeometric Finite Elements. SIAM Journal of Scientific Computing, 2013, 35, A767-A784.	2.8	66
51	Time adaptivity in the diffusive wave approximation to the shallow water equations. Journal of Computational Science, 2013, 4, 152-156.	2.9	8
52	On Round-off Error for Adaptive Finite Element Methods. Procedia Computer Science, 2012, 9, 1474-1483.	2.0	9
53	FastMat: A C++ library for multi-index array computations. Advances in Engineering Software, 2012, 54, 38-48.	3.8	2
54	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

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55	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
56	Parallel distributed computing using Python. Advances in Water Resources, 2011, 34, 1124-1139.	3.8	350
57	Cython: The Best of Both Worlds. Computing in Science and Engineering, 2011, 13, 31-39.	1.2	745
58	Diffusive Wave Approximation to the Shallow Water Equations: Computational Approach. Procedia Computer Science, 2011, 4, 1828-1833.	2.0	6
59	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
60	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
61	MPI for Python: Performance improvements and MPI-2 extensions. Journal of Parallel and Distributed Computing, 2008, 68, 655-662.	4.1	234
62	Dynamic boundary conditions in computational fluid dynamics. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 1219-1232.	6.6	14
63	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
64	A preconditioner for the Schur complement matrix. Advances in Engineering Software, 2006, 37, 754-762.	3.8	5
65	MPI for Python. Journal of Parallel and Distributed Computing, 2005, 65, 1108-1115.	4.1	279
66	Isogeometric Shell Formulation based on a Classical Shell Model. , 0, , .		3