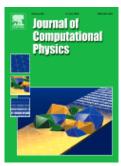


JOURNAL OF COMPUTATIONAL PHYSICS

AUTHOR INFORMATION PACK

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DESCRIPTION

The Journal of Computational Physics focuses on the computational aspects of physical problems. JCP encourages original scientific contributions in advanced mathematical and numerical modeling reflecting a combination of concepts, methods and principles which are often interdisciplinary in nature and span several areas of physics, mechanics, applied mathematics, statistics, applied geometry, computer science, chemistry and other scientific disciplines as well: the Journal's editors seek to emphasize methods that cross disciplinary boundaries.

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Lagrangian and Arbitrary-Lagrangian-Eulerian (ALE) method for compressible hydrodynamics equations; Numerical method for radiation transfer equations; High order numerical method for hyperbolic conservation laws

Eric Darve, Stanford University, Stanford, California, United States of America

Numerical linear algebra, machine learning for computational engineering, parallel computing, hierarchical solvers (LU, QR factorizations) for large sparse matrices, task-based parallel programming systems

Giacomo Dimarco, University of Ferrara, Department of Mathematics and Computer Science, Ferrara, Italy Kinetic equations; Monte Carlo methods; Multiscale numerical methods; Collective dynamics; Self-Organization; Uncertainty quantification; Computational plasma Physics

Yalchin Efendiev, Texas A&M University, Department of Mathematics, College Station, Texas, United States of America

Numerical analysis, Scientific Computing, Multiscale Simulation, Uncertainty Quantification

Ron Fedkiw, Stanford University, Stanford, California, United States of America

Solid-fluid coupling; Interfaces; Compressible flow; Incompressible flow

Gregor Gassner, University of Cologne Mathematical Institute, Cologne, Germany

Discontinuous Galerkin methods, Spectral element methods, Summation-by-parts operators, skew-symmetric formulations, discrete entropy stability, multi-scale problems, large eddy simulation, compressible Euler and Navier-Stokes simulations, ideal and resistive MHD equations, Shallow Water equations, high performance computing, massively parallel simulations, post processing and visualisation of big piecewise polynomial data, high order mesh generation

Frederic G. Gibou, University of California Santa Barbara, Santa Barbara, California, United States of America Level set methods; Finite difference/volume approximations of PDEs; Parallel computing

Jan Hesthaven, Federal Polytechnic School of Lausanne, Lausanne, Switzerland

Numerical methods for PDE's; High-order methods; Absorbing boundary conditions; Reduced order modeling; Wave-problems; Conservation laws; Computational electromagnetics

Shi Jin, Shanghai Jiao Tong University - Fahua Campus, Shanghai, China

Kinetic equations, hyperbolic conservation laws, quantum dynamics, high frequency waves, uncertainty quantification

George E. Karniadakis, Brown University, Providence, Rhode Island, United States of America

Stochastic multiscale methods, Uncertainty quantification, Fractional PDEs, Atomistic methods, Spectral and spectral element methods, Machine learning, Scientific Machine Learning

Barry Koren, Eindhoven University of Technology, Eindhoven, Netherlands

Scientific Computing; Computational Fluid Dynamics

Tony Lelievre, National College of Civil Engineering, Marne La Vallee, France

Computational statistical physics, Rare event sampling, Free energy calculation, Metastability, Model Order Reduction, quantum Monte carlo methods, Free surface flow, Multiscale models of complex fluids

Lin Lin, University of California Berkeley, Department of Mathematics, Berkeley, California, United States of America

Electronic structure theory; Quantum many-body physics; Quantum computation

Li-Shi Luo, Old Dominion University, Norfolk, Virginia, United States of America

Kinetic methods for CFD (lattice Boltzmann equation, lattice gas automata, and gas-kinetic scheme); Kinetic theory and non-equilibrium statistical mechanics; non-equilibrium and complex fluids; DNS and LES of turbulence

Pierre-Henri Maire, French Alternative Energies and Atomic Energy Commission Division of Military Applications Cesta, Le Barp, France

Finite Volume methods for multi-material compressible fluid flows, Lagrangian hydrodynamics, Arbitrary Lagrangian-Eulerian methods, Finite Volume methods for non-linear solid dynamics

Karel Matouš, University of Notre Dame, Notre Dame, Indiana, United States of America

Predictive computational science and engineering at multiple spatial and temporal scales including multi-physics interactions; Development of advanced numerical methods; High performance parallel computing.

Rajat Mittal, Johns Hopkins University, Baltimore, Maryland, United States of America

Computational fluid dynamics; Biofluid dynamics; Fluid-structure interaction; Flow control; Biomimetics and immersed boundary methods

Parviz Moin, Stanford University, Stanford, California, United States of America

Computational fluid dynamics; High fidelity numerical simulation of multi-physics turbulent flows

Jim Morel, Texas A&M University, College Station, Texas, United States of America

Neutral and charge-particle transport methods, deterministic methods, Monte Carlo methods, hybrid methods, radiation-hydrodynamics methods, multiphysics methods, reduced-order methods

Jan Nordström, Linköping University, Linköping, Sweden and University of Johannesburg, Johannesburg, South Africa

Initial boundary value problems, Boundary and interface conditions, High order methods, Well-posedness and stability, Wave and uncertainty propagation

Stanley Osher, University of California Los Angeles, Los Angeles, California, United States of America

Nonlinear hyperbolic equations; Level set methods; Image and information processing; Optimization **Jianxian Qiu**, Xiamen University, Xiamen, China

Numerical solutions of conservation laws and in general convection dominated problems using: Finite difference essentially non-oscillatory (ENO) methods and weighted ENO (WENO) methods, Finite element discontinuous Galerkin methods (DG), Numerical solution of Hamilton-Jacobi type equations, Computational fluid dynamics, Simulations of multi-phase flow using DG and WENO method

Mario Ricchiuto, Inria, Bordeaux Research Center, Talence, France

Numerical methods for partial differential equations, Hyperbolic balance laws, Unstructured grids, Residual distribution and finite element methods, Immersed and embedded methods, Free surface flows, Geophysical flows, Compressible flows

Pierre Sagaut, Laboratory of Mechanics Modelling and Clean Processes, Marseille, France

Guglielmo Scovazzi, Duke University, Department of Civil and Environmental Engineering, Durham, North Carolina, United States of America

Finite element methods, Computational fluid and solid mechanics, Multiphase porous media flows, Computational methods for fluid and solid materials under extreme load conditions, Turbulent flow computations, Instability phenomena, immersed boundary finite element methods, shifted boundary method, explicit dynamics, immersed boundary

Chi-Wang Shu, Brown University, Providence, Rhode Island, United States of America

Finite difference; Finite volume and finite element methods; Computational fluid dynamics

Piotr Smolarkiewicz, National Center for Atmospheric Research, Boulder, Colorado, United States of America Scientific computing; Geophysical flows of all scales; Solar dynamo; Non-Newtonian fluids; Dynamics of continuous media

Eric Sonnendrücker, Max-Planck-Institute of Plasma Physics, Garching, Germany

Computational plasma physics; modelling and simulation of magnetic confinement fusion; numerical methods for kinetic, gyrokinetic and fluid plasma models; geometric and structure preserving numerical methods

Shuyu Sun, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia

Finite element methods, Subsurface reservoir modeling and simulation, Multiphase flow in porous media, Phase behavior modeling and computation

Mark Sussman, Florida State University, Tallahassee, Florida, United States of America

Multiphase Flows, Deforming boundary problems, Adaptive Mesh Refinement, Transport processes on Fluidic Interfaces, High performance Computing

Huazhong Tang, Peking University, Beijing, China

Tao Tang, Southern University of Science and Technology, Shenzhen, Guangdong, China

Spectral and high order methods; Adaptive methods; Computational fluid dynamics.

Chrysoula Tsogka, University of California Merced, Merced, California, United States of America

wave propagation, random media, coherent interferometry, imaging, time reversal

Eli Turkel, Tel Aviv University, Tel Aviv, Israel

Fast acceleration algorithms for Navier Stokes; High order compact methods for wave equation in general shaped domains; Time Reversal for source and obstacle location; Reading ostraca from first Temple era

Karen Veroy-Grepl, RWTH Aachen University, Aachen, Germany

Numerical methods for partial differential equations, Model order reduction and its use in optimization, Uncertainty quantification and data assimilation, as well as development and application of these methods for problems in medicine, Heat transfer, Solid and fluid mechanics and Multi-scale materials engineering.

Dongbin Xiu, The Ohio State University, Columbus, Ohio, United States of America

Uncertainty quantification; Approximation theory; Data assimilation

Stephane Zaleski, Sorbonne University, Paris, France

Volume-of-Fluid Method, Multiphase Flow, Surface Tension, Interface Tracking, Free Surface

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[7] E. Coon, M. Berndt, A. Jan, D. Svyatsky, A. Atchley, E. Kikinzon, D. Harp, G. Manzini, E. Shelef, K. Lipnikov, R. Garimella, C. Xu, D. Moulton, S. Karra, S. Painter, E. Jafarov, S. Molins, Advanced Terrestrial Simulator (ATS) v0.88 (Version 0.88), Zenodo, March 25, 2020. https://doi.org/10.5281/zenodo.3727209.

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