Alexander Kurganov

List of Publications by Year
in descending order

98
papers

5,434
citations

172207

29
h-index

82410

72
g-index

98
all docs

98
docs citations

98
times ranked

2340
citing authors

#	Article	IF	Citations
1	New High-Resolution Central Schemes for Nonlinear Conservation Laws and Convectionâ€"Diffusion Equations. Journal of Computational Physics, 2000, 160, 241-282.	1.9	1,403
2	Semidiscrete Central-Upwind Schemes for Hyperbolic Conservation Laws and Hamilton--Jacobi Equations. SIAM Journal of Scientific Computing, 2001, 23, 707-740.	1.3	691
3	A Second-Order Well-Balanced Positivity Preserving Central-Upwind Scheme for the Saint-Venant System. Communications in Mathematical Sciences, 2007, 5, 133-160.	0.5	303
4	Solution of two-dimensional Riemann problems for gas dynamics without Riemann problem solvers. Numerical Methods for Partial Differential Equations, 2002, 18, 584-608.	2.0	260
5	Central-Upwind Schemes for the Saint-Venant System. ESAIM: Mathematical Modelling and Numerical Analysis, 2002, 36, 397-425.	0.8	229
6	A Third-Order Semidiscrete Central Scheme for Conservation Laws and Convection-Diffusion Equations. SIAM Journal of Scientific Computing, 2000, 22, 1461-1488.	1.3	189
7	A second-order positivity preserving central-upwind scheme for chemotaxis and haptotaxis models. Numerische Mathematik, 2008, 111, 169-205.	0.9	106
8	New High-Resolution Semi-discrete Central Schemes for Hamiltonâ€"Jacobi Equations. Journal of Computational Physics, 2000, 160, 720-742.	1.9	103
9	High-Rayleigh-number convection in a fluid-saturated porous layer. Journal of Fluid Mechanics, 2004, 500, 263-281.	1.4	95
10	A Well-Balanced Reconstruction of Wet/Dry Fronts for the Shallow Water Equations. Journal of Scientific Computing, 2013, 56, 267-290.	1.1	93
11	A third-order semi-discrete genuinely multidimensional central scheme for hyperbolic conservation laws and related problems. Numerische Mathematik, 2001, 88, 683-729.	0.9	87
12	Adaptive Semidiscrete Central-Upwind Schemes for Nonconvex Hyperbolic Conservation Laws. SIAM Journal of Scientific Computing, 2007, 29, 2381-2401.	1.3	86
13	On a chemotaxis model with saturated chemotactic flux. Kinetic and Related Models, 2012, 5, 51-95.	0.5	84
14	Central-Upwind Schemes for Two-Layer Shallow Water Equations. SIAM Journal of Scientific Computing, 2009, 31, 1742-1773.	1.3	81
15	Well-balanced positivity preserving central-upwind scheme on triangular grids for the Saint-Venant system. ESAIM: Mathematical Modelling and Numerical Analysis, 2011, 45, 423-446.	0.8	80
16	Central-upwind schemes on triangular grids for hyperbolic systems of conservation laws. Numerical Methods for Partial Differential Equations, 2005, 21, 536-552.	2.0	79
17	Finite-volume schemes for shallow-water equations. Acta Numerica, 2018, 27, 289-351.	6.3	61
18	New Interior Penalty Discontinuous Galerkin Methods for the Kellerâ€"Segel Chemotaxis Model. SIAM Journal on Numerical Analysis, 2009, 47, 386-408.	1.1	60

#	ARTICLE	IF	CITATIONS
19	Well-balanced schemes for the Euler equations with gravitation: Conservative formulation using global fluxes. Journal of Computational Physics, 2018, 358, 36-52.	1.9	57
20	New adaptive artificial viscosity method for hyperbolic systems of conservation laws. Journal of Computational Physics, 2012, 231, 8114-8132.	1.9	49
21	Central-upwind schemes for the system of shallow water equations with horizontal temperature gradients. Numerische Mathematik, 2014, 127, 595-639.	0.9	46
22	A Smoothness Indicator for Adaptive Algorithms for Hyperbolic Systems. Journal of Computational Physics, 2002, 178, 323-341.	1.9	42
23	On reaction processes with saturating diffusion. Nonlinearity, 2006, 19, 171-193.	0.6	42
24	Formation of discontinuities in flux-saturated degenerate parabolic equations. Nonlinearity, 2003, 16, 1875-1898.	0.6	35
25	A New Approach for Designing Moving-Water Equilibria Preserving Schemes for the Shallow Water Equations. Journal of Scientific Computing, 2019, 80, 538-554.	1.1	35
26	Central schemes and contact discontinuities. ESAIM: Mathematical Modelling and Numerical Analysis, 2000, 34, 1259-1275.	0.8	33
27	Steady State and Sign Preserving Semi-Implicit Runge--Kutta Methods for ODEs with Stiff Damping Term. SIAM Journal on Numerical Analysis, 2015, 53, 2008-2029.	1.1	33
28	Effects of a saturating dissipation in Burgers-type equations. Communications on Pure and Applied Mathematics, 1997, 50, 753-771.	1.2	32
29	A New Sticky Particle Method for Pressureless Gas Dynamics. SIAM Journal on Numerical Analysis, 2007, 45, 2408-2441.	1.1	32
30	Fast and stable explicit operator splitting methods for phase-field models. Journal of Computational Physics, 2015, 303, 45-65.	1.9	32
31	Well-balanced positivity preserving cell-vertex central-upwind scheme for shallow water flows. Computers and Fluids, 2016, 136, 193-206.	1.3	30
32	Path-conservative central-upwind schemes for nonconservative hyperbolic systems. ESAIM: Mathematical Modelling and Numerical Analysis, 2019, 53, 959-985.	0.8	29
33	Well-balanced schemes for the shallow water equations with Coriolis forces. Numerische Mathematik, 2018, 138, 939-973.	0.9	28
34	Fast explicit operator splitting method for convection-diffusion equations. International Journal for Numerical Methods in Fluids, 2009, 59, 309-332.	0.9	27
35	A well-balanced positivity-preserving central-upwind scheme for shallow water equations on unstructured quadrilateral grids. Computers and Fluids, 2016, 126, 25-40.	1.3	27
36	High-order positivity-preserving hybrid finite-volume-finite-difference methods for chemotaxis systems. Advances in Computational Mathematics, 2018, 44, 327-350.	0.8	27

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37	Non-oscillatory central schemes for traffic flow models with Arrhenius look-ahead dynamics. Networks and Heterogeneous Media, 2009, 4, 431-451.	0.5	27
38	Breakdown in Burgers-type equations with saturating dissipation fluxes. Nonlinearity, 1999, 12, 247-268.	0.6	26
39	PEDESTRIAN FLOW MODELS WITH SLOWDOWN INTERACTIONS. Mathematical Models and Methods in Applied Sciences, 2014, 24, 249-275.	1.7	26
40	Well-balanced central-upwind scheme for a fully coupled shallow water system modeling flows over erodible bed. Journal of Computational Physics, 2015, 300, 202-218.	1.9	25
41	Compressible two-phase flows by central and upwind schemes. ESAIM: Mathematical Modelling and Numerical Analysis, 2004, 38, 477-493.	0.8	24
42	Local error analysis for approximate solutions of hyperbolic conservation laws. Advances in Computational Mathematics, 2005, 22, 79-99.	0.8	24
43	Interface tracking method for compressible multifluids. ESAIM: Mathematical Modelling and Numerical Analysis, 2008, 42, 991-1019.	0.8	23
44	Well-balanced positivity preserving central-upwind scheme with a novel wet/dry reconstruction on triangular grids for the Saint-Venant system. Journal of Computational Physics, 2018, 374, 213-236.	1.9	23
45	Second-Order Fully Discrete Central-Upwind Scheme for Two-Dimensional Hyperbolic Systems of Conservation Laws. SIAM Journal of Scientific Computing, 2017, 39, A947-A965.	1.3	22
46	Finite-Volume-Particle Methods for Models of Transport of Pollutant in Shallow Water. Journal of Scientific Computing, 2006, 27, 189-199.	1.1	21
47	Numerical method for optimal control problems governed by nonlinear hyperbolic systems of PDEs. Communications in Mathematical Sciences, 2015, 13, 15-48.	0.5	21
48	Moving-water equilibria preserving central-upwind schemes for the shallow water equations. Communications in Mathematical Sciences, 2016, 14, 1643-1663.	0.5	21
49	Stiff Systems of Hyperbolic Conservation Laws: Convergence and Error Estimates. SIAM Journal on Mathematical Analysis, 1997, 28, 1446-1456.	0.9	20
50	Central-Upwind Scheme for Savageâ€“Hutter Type Model of Submarine Landslides and Generated Tsunami Waves. Computational Methods in Applied Mathematics, 2014, 14, 177-201.	0.4	19
51	On a hybrid finite-volume-particle method. ESAIM: Mathematical Modelling and Numerical Analysis, 2004, 38, 1071-1091.	0.8	18
52	A well-balanced central-upwind scheme for the thermal rotating shallow water equations. Journal of Computational Physics, 2020, 411, 109414.	1.9	18
53	A simple Eulerian finite-volume method for compressible fluids in domains with moving boundaries. Communications in Mathematical Sciences, 2008, 6, 531-556.	0.5	18
54	Semi-discrete central-upwind schemes with reduced dissipation for Hamilton-Jacobi equations. IMA Journal of Numerical Analysis, 2005, 25, 113-138.	1.5	17

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55	A Fast Explicit Operator Splitting Method for Passive Scalar Advection. Journal of Scientific Computing, 2010, 45, 200-214.	1.1	17
56	THREE-LAYER APPROXIMATION OF TWO-LAYER SHALLOW WATER EQUATIONS. Mathematical Modelling and Analysis, 2013, 18, 675-693.	0.7	17
57	Moist-convective thermal rotating shallow water model. Physics of Fluids, 2020, 32, 066601.	1.6	16
58	On Burgers-type equations with nonmonotonic dissipative fluxes. Communications on Pure and Applied Mathematics, 1998, 51, 443-473.	1.2	15
59	On degenerate saturated-diffusion equations with convection. Nonlinearity, 2005, 18, 609-630.	0.6	15
60	An asymptotic preserving scheme for the two-dimensional shallow water equations with Coriolis forces. Journal of Computational Physics, 2019, 391, 259-279.	1.9	15
61	On a practical implementation of particle methods. Applied Numerical Mathematics, 2006, 56, 1418-1431.	1.2	14
62	Numerical study of two-species chemotaxis models. Discrete and Continuous Dynamical Systems - Series B, 2014, 19, 131-152.	0.5	14
63	Central-Upwind Schemes for Boussinesq Paradigm Equations. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2011, , 267-281.	0.2	14
64	An Eulerianâ€“Lagrangian method for optimization problems governed by multidimensional nonlinear hyperbolic PDEs. Computational Optimization and Applications, 2014, 59, 689-724.	0.9	13
65	Fifth-Order A-WENO Finite-Difference Schemes Based on a New Adaptive Diffusion Central Numerical Flux. SIAM Journal of Scientific Computing, 2020, 42, A3932-A3956.	1.3	13
66	Well-Balanced Central Schemes on Overlapping Cells with Constant Subtraction Techniques for the Saint-Venant Shallow Water System. Journal of Scientific Computing, 2015, 63, 678-698.	1.1	12
67	Thermal versus isothermal rotating shallow water equations: comparison of dynamical processes by simulations with a novel well-balanced central-upwind scheme. Geophysical and Astrophysical Fluid Dynamics, 2021, 115, 125-154.	0.4	11
68	Well-Balancing via Flux Globalization: Applications to Shallow Water Equations with Wet/Dry Fronts. Journal of Scientific Computing, 2022, 90, 1.	1.1	9
69	Adaptive Central-Upwind Schemes for Hamiltonâ€“Jacobi Equations with Nonconvex Hamiltonians. Journal of Scientific Computing, 2006, 27, 323-333.	1.1	7
70	Pressureâ€based adaption indicator for compressible euler equations. Numerical Methods for Partial Differential Equations, 2015, 31, 1844-1874.	2.0	7
71	A Fast Explicit Operator Splitting Method for Modified Buckleyâ€“Leverett Equations. Journal of Scientific Computing, 2015, 64, 837-857.	1.1	7
72	Central-upwind scheme for shallow water equations with discontinuous bottom topography. Bulletin of the Brazilian Mathematical Society, 2016, 47, 91-103.	0.3	7

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73	An adaptive well-balanced positivity preserving central-upwind scheme on quadtree grids for shallow water equations. Computers and Fluids, 2020, 208, 104633.	1.3	7
74	Adaptive Moving Mesh Central-Upwind Schemes for Hyperbolic System of PDEs: Applications to Compressible Euler Equations and Granular Hydrodynamics. Communications on Applied Mathematics and Computation, 2021, 3, 445-479.	0.7	7
75	Numerical dissipation switch for two-dimensional central-upwind schemes. ESAIM: Mathematical Modelling and Numerical Analysis, 2021, 55, 713-734.	0.8	7
76	Adaptive moving mesh upwind scheme for the two-species chemotaxis model. Computers and Mathematics With Applications, 2019, 77, 3172-3185.	1.4	6
77	Moving-Water Equilibria Preserving Partial Relaxation Scheme for the Saint-Venant System. SIAM Journal of Scientific Computing, 2020, 42, A2206-A2229.	1.3	6
78	An asymptotic preserving scheme for kinetic chemotaxis models in two space dimensions. Kinetic and Related Models, 2019, 12, 195-216.	0.5	6
79	Solving Two-Mode Shallow Water Equations Using Finite Volume Methods. Communications in Computational Physics, 2014, 16, 1323-1354.	0.7	5
80	Three-dimensional shallow water system: A relaxation approach. Journal of Computational Physics, 2017, 333, 160-179.	1.9	5
81	Flux Globalization Based Well-Balanced Path-Conservative Central-Upwind Schemes for Shallow Water Models. Journal of Scientific Computing, 2022, 92, .	1.1	5
82	Central-Upwind Scheme on Triangular Grids for the Saint-Venant System of Shallow Water Equations. AIP Conference Proceedings, 2011, , .	0.3	4
83	One-Dimensional/Two-Dimensional Coupling Approach with Quadrilateral Confluence Region for Modeling River Systems. Journal of Scientific Computing, 2019, 81, 1297-1328.	1.1	4
84	Semi-discrete central-upwind Rankine-Hugoniot schemes for hyperbolic systems of conservation laws. Journal of Computational Physics, 2021, 428, 110078.	1.9	4
85	Interaction of tropical cyclone-like vortices with sea-surface temperature anomalies and topography in a simple shallow-water atmospheric model. Physics of Fluids, 2021, 33, .	1.6	4
86	Particle methods for PDEs arising in financial modeling. Applied Numerical Mathematics, 2015, 93, 123-139.	1.2	3
87	An Adaptive Artificial Viscosity Method for the Saint-Venant System. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2013, , 125-141.	0.2	3
88	Fifth-Order A-WENO Schemes Based on the Adaptive Diffusion Central-Upwind Rankine-Hugoniot Fluxes. Communications on Applied Mathematics and Computation, 2023, 5, 295-314.	0.7	3
89	Well-balanced positivity preserving adaptive moving mesh central-upwind schemes for the Saint-Venant system. ESAIM: Mathematical Modelling and Numerical Analysis, 2022, 56, 1327-1360.	0.8	3
90	A Well-Balanced Asymptotic Preserving Scheme for the Two-Dimensional Rotating Shallow Water Equations with Nonflat Bottom Topography. SIAM Journal of Scientific Computing, 2022, 44, A1655-A1680.	1.3	3

#	Article	IF	Citations
91	On Burgers-type equations with nonmonotonic dissipative fluxes. , 1998, 51, 443.		2
92	An Accurate Deterministic Projection Method for Hyperboles Systems with Stiff Source Term. , 2003, , 665-674.		1
93	On Convergence of Numerical Methods for Optimization Problems Governed by Scalar Hyperbolic Conservation Laws. Springer Proceedings in Mathematics and Statistics, 2018, , 691-706.	0.1	1
94	Hybrid Multifluid Algorithms Based on the Path-Conservative Central-Upwind Scheme. Journal of Scientific Computing, 2021, 89, 1.	1.1	1
95	Quasi-Lagrangian Acceleration of Eulerian Methods. Communications in Computational Physics, 2009, 6, 743-757.	0.7	1
96	High-Resolution Positivity and Asymptotic Preserving Numerical Methods for Chemotaxis and Related Models. Modeling and Simulation in Science, Engineering and Technology, 2019, , 109-148.	0.4	1
97	A Simple Finite-Volume Method on a Cartesian Mesh for Pedestrian Flows with Obstacles. Springer Proceedings in Mathematics and Statistics, 2017, , 43-55.	0.1	0
98	Monotonization of a Family of Implicit Schemes for the Burgers Equation. , 2021, , 247-256.		0