Zhi Jian Wang

List of Publications by Year
in descending order

139	8,237	81900 39	48315 88
papers	citations	h-index	g-index

141	141	141	2165
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Spectral difference method for unstructured grids I: Basic formulation. Journal of Computational Physics, 2006, 216, 780-801.	3.8	716
2	Highâ€•order CFD methods: current status and perspective. International Journal for Numerical Methods in Fluids, 2013, 72, 811-845.	1.6	704
3	Spectral (Finite) Volume Method for Conservation Laws on Unstructured Grids. Basic Formulation. Journal of Computational Physics, 2002, 178, 210-251.	3.8	696
4	Spectral (finite) volume method for conservation laws on unstructured grids IV: extension to two-dimensional systems. Journal of Computational Physics, 2004, 194, 716-741.	3.8	491
5	Spectral (Finite) Volume Method for Conservation Laws on Unstructured Grids. Journal of Computational Physics, 2002, 179, 665-697.	3.8	474
6	Spectral (finite) volume method for conservation laws on unstructured grids VI: Extension to viscous flow. Journal of Computational Physics, 2006, 215, 41-58.	3.8	391
7	A unifying lifting collocation penalty formulation including the discontinuous Galerkin, spectral volume/difference methods for conservation laws on mixed grids. Journal of Computational Physics, 2009, 228, 8161-8186.	3.8	352
8	High-order methods for the Euler and Navierâ€“Stokes equations on unstructured grids. Progress in Aerospace Sciences, 2007, 43, 1-41.	12.1	255
9	Spectral Difference Method for Unstructured Grids II: Extension to the Euler Equations. Journal of Scientific Computing, 2007, 32, 45-71.	2.3	224
10	High-order methods for computational fluid dynamics: A brief review of compact differential formulations on unstructured grids. Computers and Fluids, 2014, 98, 209-220.	2.5	172
11	Spectral (finite) volume method for conservation laws on unstructured grids V: Extension to three-dimensional systems. Journal of Computational Physics, 2006, 212, 454-472.	3.8	160
12	Fast, Block Lower-Upper Symmetric Gauss-Seidel Scheme for Arbitrary Grids. AIAA Journal, 2000, 38, 2238-2245.	2.6	156
13	Title is missing!. Journal of Scientific Computing, 2004, 20, 137-157.	2.3	149
14	On the Stability and Accuracy of the Spectral Difference Method. Journal of Scientific Computing, 2008, 37, 162-188.	2.3	137
15	A block LU-SGS implicit dual time-stepping algorithm for hybrid dynamic meshes. Computers and Fluids, 2004, 33, 891-916.	2.5	134
16	A High-Order Unifying Discontinuous Formulation for the Navier-Stokes Equations on 3D Mixed Grids. Mathematical Modelling of Natural Phenomena, 2011, 6, 28-56.	2.4	109
17	Optimized Weighted Essentially Nonoscillatory Schemes for Linear Waves with Discontinuity. Journal of Computational Physics, 2001, 174, 381-404.	3.8	101
18	A Quadtree-based adaptive Cartesian/Quad grid flow solver for Navier-Stokes equations. Computers and Fluids, 1998, 27, 529-549.	2.5	93

#	Article	IF	Citations
19	On the accuracy and efficiency of discontinuous Galerkin, spectral difference and correction procedure via reconstruction methods. Journal of Computational Physics, 2014, 259, 70-95.	3.8	93
20	Realizable high-order finite-volume schemes for quadrature-based moment methods. Journal of Computational Physics, 2011, 230, 5328-5352.	3.8	88
21	Extension of the spectral volume method to high-order boundary representation. Journal of Computational Physics, 2006, 211, 154-178.	3.8	85
22	A Fully Conservative Interface Algorithm for Overlapped Grids. Journal of Computational Physics, 1995, 122, 96-106.	3.8	78
23	Spectral difference method for compressible flow on unstructured grids with mixed elements. Journal of Computational Physics, 2009, 228, 2847-2858.	3.8	78
24	A fully automated Chimera methodology for multiple moving body problems. International Journal for Numerical Methods in Fluids, 2000, 33, 919-938.	1.6	71
25	High-order accurate simulations of unsteady flow past plunging and pitching airfoils. Computers and Fluids, 2011, 40, 236-248.	2.5	67
26	A p-multigrid spectral difference method with explicit and implicit smoothers on unstructured triangular grids. Computers and Fluids, 2009, 38, 254-265.	2.5	65
27	Towards industrial large eddy simulation using the FR/CPR method. Computers and Fluids, 2017, 156, 579-589.	2.5	64
28	A fast nested multi-grid viscous flow solver for adaptive Cartesian/Quad grids. International Journal for Numerical Methods in Fluids, 2000, 33, 657-680.	1.6	61
29	A Study of Viscous Flux Formulations for a p-Multigrid Spectral Volume Navier Stokes Solver. Journal of Scientific Computing, 2009, 41, 165-199.	2.3	60
30	A conservative correction procedure via reconstruction formulation with the Chain-Rule divergence evaluation. Journal of Computational Physics, 2013, 232, 7-13.	3.8	59
31	Anisotropic Solution-Adaptive Viscous Cartesian Grid Method for Turbulent Flow Simulation. AIAA Journal, 2002, 40, 1969-1978.	2.6	56
32	Performance of Low-Dissipation Euler Fluxes and Preconditioned LU-SGS at Low Speeds. Communications in Computational Physics, 2011, 10, 90-119.	1.7	54
33	Adaptive High-Order Methods in Computational Fluid Dynamics. Advances in Computational Fluid Dynamics, 2011, , .	0.1	51
34	Large Eddy Simulation of Compressible Turbulent Channel Flow with Spectral Difference method. , 2009, , .		46
35	A high-order spectral difference method for unstructured dynamic grids. Computers and Fluids, 2011, 48, 84-97.	2.5	46
36	A Parameter-Free Generalized Moment Limiter for High-Order Methods on Unstructured Grids. Advances in Applied Mathematics and Mechanics, 2009, 1, 451-480.	1.2	46

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37	An adaptive Cartesian grid generation method for ?Dirty? geometry. International Journal for Numerical Methods in Fluids, 2002, 39, 703-717.	1.6	43
38	A review of flux reconstruction or correction procedure via reconstruction method for the Navier-Stokes equations. Mechanical Engineering Reviews, 2016, 3, 15-00475-15-00475.	4.7	43
39	Efficient quadrature-free high-order spectral volume method on unstructured grids: Theory and 2D implementation. Journal of Computational Physics, 2008, 227, 1620-1642.	3.8	41
40	Absorbing boundary conditions for the Euler and Navierâ€“Stokes equations with the spectral difference method. Journal of Computational Physics, 2010, 229, 8733-8749.	3.8	40
41	Differential Formulation of Discontinuous Galerkin and Related Methods for the Navier-Stokes Equations. Communications in Computational Physics, 2013, 13, 1013-1044.	1.7	38
42	Fourier analysis and evaluation of DG, FD and compact difference methods for conservation laws. Journal of Computational Physics, 2018, 373, 835-862.	3.8	38
43	On the connection between the spectral volume and the spectral difference method. Journal of Computational Physics, 2007, 227, 877-885.	3.8	36
44	Evaluation of discontinuous Galerkin and spectral volume methods for scalar and system conservation laws on unstructured grids. International Journal for Numerical Methods in Fluids, 2004, 45, 819-838.	1.6	35
45	High fidelity numerical simulation of airfoil thickness and kinematics effects on flapping airfoil propulsion. Journal of Fluids and Structures, 2013, 42, 166-186.	3.4	34
46	A priori and a posteriori evaluations of sub-grid scale models for the Burgersâ€™ equation. Computers and Fluids, 2016, 139, 92-104.	2.5	34
47	Effects of Surface Roughness on Separated and Transitional Flows over a Wing. AIAA Journal, 2012, 50, 593-609.	2.6	33
48	A perspective on high-order methods in computational fluid dynamics. Science China: Physics, Mechanics and Astronomy, 2016, 59, 1.	5.1	33
49	The direct discontinuous Galerkin (DDG) viscous flux scheme for the high order spectral volume method. Computers and Fluids, 2010, 39, 2007-2021.	2.5	32
50	LDG2: AÂVariant of the LDG Flux Formulation forÂtheÂSpectral Volume Method. Journal of Scientific Computing, 2011, 46, 314-328.	2.3	32
51	High-order computational fluid dynamics tools for aircraft design. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130318.	3.4	32
52	A High-Order Lifting Collocation Penalty Formulation for the Navier-Stokes Equations on 2-D Mixed Grids. , 2009, , .		31
53	A Unifying Lifting Collocation Penalty Formulation for the Euler Equations on Mixed Grids. , 2009, , .		29
54	Large Eddy Simulation of Flow over a Cylinder Using High-Order Spectral Difference Method. Advances in Applied Mathematics and Mechanics, 2010, 2, 451-466.	1.2	29

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55	An efficient parallel/unstructured-multigrid preconditioned implicit method for simulating 3D unsteady compressible flows with moving objects. Journal of Computational Physics, 2006, 215, 661-690.	3.8	27
56	Realizable high-order finite-volume schemes for quadrature-based moment methods applied to diffusion population balance equations. Journal of Computational Physics, 2013, 249, 162-179.	3.8	27
57	Adjoint-based error estimation and mesh adaptation for the correction procedure via reconstruction method. Journal of Computational Physics, 2015, 295, 261-284.	3.8	27
58	An Implicit LU-SGS Scheme for the Spectral Volume Method on Unstructured Tetrahedral Grids. Communications in Computational Physics, 2009, 6, 978-996.	1.7	27
59	Validation of Arbitrary Unstructured CFD Code for Aerodynamic Analyses. Transactions of the Japan Society for Aeronautical and Space Sciences, 2011, 53, 311-319.	0.7	25
60	Radiation transport modeling using extended quadrature method of moments. Journal of Computational Physics, 2013, 246, 221-241.	3.8	25
61	Localized Artificial Viscosity Stabilization of Discontinuous Galerkin Methods for Nonhydrostatic Mesoscale Atmospheric Modeling. Monthly Weather Review, 2015, 143, 4823-4845.	1.4	25
62	Implicit Large-Eddy Simulation for the High-Order Flux Reconstruction Method. AIAA Journal, 2016, 54, 2721-2733.	2.6	25
63	Discontinuous Spectral Difference Method for Conservation Laws on Unstructured Grids. , 2006, , 449-454.		24
64	High-order adaptive quadrature-free spectral volume method on unstructured grids. Computers and Fluids, 2009, 38, 2006-2025.	2.5	23
65	Modeling of bubble-column flows with quadrature-based moment methods. Chemical Engineering Science, 2011, 66, 3058-3070.	3.8	23
66	A FV-TD electromagnetic solver using adaptive Cartesian grids. Computer Physics Communications, 2002, 148, 17-29.	7.5	22
67	Overset Adaptive Cartesian/Prism Grid Method for Stationary and Moving-Boundary Flow Problems. AIAA Journal, 2007, 45, 1774-1779.	2.6	22
68	A high order spectral volume solution to the Burgers' equation using the Hopfâ€“Cole transformation. International Journal for Numerical Methods in Fluids, 2012, 69, 781-801.	1.6	22
69	On the Connection Between the Correction and Weighting Functions in the Correction Procedure via Reconstruction Method. Journal of Scientific Computing, 2013, 54, 227-244.	2.3	22
70	Accuracy, efficiency and scalability of explicit and implicit FR/CPR schemes in large eddy simulation. Computers and Fluids, 2019, 195, 104316.	2.5	21
71	Improved Formulation for Geometric Properties of Arbitrary Polyhedra. AIAA Journal, 1999, 37, 1326-1327.	2.6	20
72	The Spectral Difference Method for 2D Euler Equations on Unstructured Grids. , 2005, , .		20

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73	High-Order Multidomain Spectral Difference Method for the Navier-Stokes Equations. , 2006, , .		20
74	An exponential time-integrator scheme for steady and unsteady inviscid flows. Journal of Computational Physics, 2018, 365, 206-225.	3.8	20
75	A UNIFYING DISCONTINUOUS FORMULATION FOR HYBRID MESHES. Advances in Computational Fluid Dynamics, 2011, , 423-453.	0.1	20
76	Recent Development on the Conservation Property of Chimera. International Journal of Computational Fluid Dynamics, 2001, 15, 265-278.	1.2	19
77	A Study of Curved Boundary Representations for 2D High Order Euler Solvers. Journal of Scientific Computing, 2010, 44, 323-336.	2.3	18
78	A High-Order Unifying Discontinuous Formulation for 3-D Mixed Grids. , 2010, , .		18
79	A third-order gas-kinetic CPR method for the Euler and Navierâ€“Stokes equations on triangular meshes. Journal of Computational Physics, 2018, 363, 329-353.	3.8	18
80	Evolution of vortex structures over flapping foils in shear flows and its impact on aerodynamic performance. Journal of Fluids and Structures, 2018, 76, 116-134.	3.4	17
81	Curvature-Based Wall Boundary Condition for the Euler Equations on Unstructured Grids. AIAA Journal, 2003, 41, 27-33.	2.6	16
82	Efficient Implicit LU-SGS Algorithm for High-Order Spectral Difference Method on Unstructured Hexahedral Grids. , 2007, , .		16
83	A Comparison of Approximate Versus Exact Geometrical Representations of Roughness for CFD Calculations of cf and St. Journal of Turbomachinery, 2008, 130, .	1.7	16
84	Airfoil Thickness Effects on the Thrust Generation of Plunging Airfoils. Journal of Aircraft, 2012, 49, 1434-1439.	2.4	16
85	Multi-Dimensional Spectral Difference Method for Unstructured Grids. , 2005, , .		14
86	Formulations and analysis of the spectral volume method for the diffusion equation. Communications in Numerical Methods in Engineering, 2004, 20, 927-937.	1.3	13
87	Efficient Implicit Non-linear LU-SGS Approach for Viscous Flow Computation Using High-Order Spectral Difference Method. , 2007, , .		13
88	Unstructured grid applications on GPU. , 2011, , .		13
89	Evaluation of Second- and High-Order Solvers in Wall-Resolved Large-Eddy Simulation. AIAA Journal, 2019, 57, 1636-1648.	2.6	13
90	On the mesh resolution of industrial LES based on the DNS of flow over the T106C turbine. Advances in Aerodynamics, 2019, 1, .	2.5	12

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91	Computational Fluid Dynamics, 1998, 10, 255-265.	1.2	11
92	A Residual-Based Procedure for Hp-Adaptation on 2-D Hybrid Meshes. , 2011, , .		11
93	Towards High-Order Large Eddy Simulation of Aero-Thermal Flows for Turbomachinery Applications. , 2017, , .		10
94	Flux Reconstruction Implementation of an Algebraic Wall Model for Large-Eddy Simulation. AIAA Journal, 2020, 58, 3051-3062.	2.6	10
95	Improving the High Order Spectral Volume Formulation Using a Diffusion Regulator. Communications in Computational Physics, 2012, 12, 247-260.	1.7	9
96	Formation of Bifurcated Wakes Behind Finite Span Flapping Wings. AIAA Journal, 2013, 51, 2040-2044.	2.6	9
97	A Study of Viscous Flux Formulations for an Implicit P-Multigrid Spectral Volume Navier Stokes Solver. , 2008, , .		8
98	An Overset Adaptive Cartesian/Prism Grid Method for Moving Boundary Flow Problems. , 2005, , .		7
99	Simulation of CAA Benchmark Problems Using High-Order Spectral Difference Method and Perfectly Matched Layers. , 2010, , .		7
100	Curvature and entropy based wall boundary condition for the high order spectral volume Euler solver. Computers and Fluids, 2011, 44, 79-88.	2.5	7
101	Direct Simulation of Surface Roughness Effects with a RANS and DES Approach on Viscous Adaptive Cartesian Grids. , 2004, , .		6
102	The Level Set Method on Adaptive Cartesian Grid for Interface Capturing. , 2004, , .		6
103	Development of High-Order Realizable Finite-Volume Schemes for Quadrature-Based Moment Method. , 2010, , .		6
104	Implicit large Eddy simulation of the NASA CRM high-lift configuration near stall. Computers and Fluids, 2021, 220, 104887.	2.5	6
105	High-Order Overset Flux Reconstruction Method for Dynamic Moving Grids. AIAA Journal, 2020, 58, 4534-4547.	2.6	6
106	High-Order Spectral Volume Method for 2D Euler Equations. , 2003, , .		5
107	Three-Dimensional High-Order Spectral Finite Volume Method for Unstructured Grids. , 2003, , .		5
108	High-Order Spectral Volume Method for the Navier-Stokes Equations on Unstructured Grids. , 2004, , .		5

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109	A p-Multigrid Spectral Difference method with explicit and implicit smoothers on unstructured grids. , 2007, , .		5
110	A high-order flux reconstruction method for 3D mixed overset meshes. Computers and Fluids, 2020, 205, 104535.	2.5	5
111	Benchmark for scale-resolving simulation with curved walls: the Taylor Couette flow. Advances in Aerodynamics, 2021, 3, .	2.5	5
112	Extension of the SD Method to Viscous Flow on Unstructured Grids. , 2009, , 119-124.		5
113	Partition Design and Optimization for High Order Spectral Volume Schemes. , 2009, , .		4
114	Homotopy continuation of the high-order flux reconstruction/correction Procedure via reconstruction (FR/CPR) method for steady flow simulation. Computers and Fluids, 2016, 131, 16-28.	2.5	4
115	Evaluation of Discontinuous Galerkin and Spectral Volume Methods for 2D Euler Equations on Unstructured Grids. , 2003, , .		3
116	Evaluation of High-Order Spectral Volume Method for Benchmark Computational Aeroacoustic Problems. AIAA Journal, 2005, 43, 337-348.	2.6	3
117	A high order Spectral Volume method for moving boundary problems. , 2010, , .		3
118	An Optimized Correction Procedure via Reconstruction Formulation for Broadband Wave Computation. Communications in Computational Physics, 2013, 13, 1265-1291.	1.7	3
119	The efficient implementation of correction procedure via reconstruction with graphics processing unit computing. Computers and Fluids, 2014, 101, 263-272.	2.5	3
120	A Mathematical Analysis of Scale Similarity. Communications in Computational Physics, 2017, 21, 149-161.	1.7	3
121	Adaptive high-order discretization of the Reynolds-averaged Navier-Stokes equations. Computers and Fluids, 2017, 159, 137-155.	2.5	3
122	Automated low-order to high-order mesh conversion. Engineering With Computers, 2019, 35, 323-335.	6.1	3
123	High-Order Spectral Volume Method for Benchmark Aeroacoustic Problems. , 2003, , .		2
124	Efficient Implementation of High-Order Spectral Volume Method for Multidimensional Conservation Laws on Unstructured Grids. , 2007, , .		2
125	Spectral Volume and Spectral Difference Methods. Handbook of Numerical Analysis, 2016, , 199-226.	1.8	2
126	Gap-induced transition via oblique breakdown at Mach 6. Shock Waves, 2019, 29, 1181-1190.	1.9	2

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127	A two-stage fourth-order gas-kinetic CPR method for the Navier-Stokes equations on triangular meshes. Journal of Computational Physics, 2021, 451, 110830.	3.8	2
128	Evaluation of Discontinuous Galerkin and Spectral Volume Methods for 2D Euler Equations on Unstructured Grids. , 2003, , .		1
129	A Block LU-SGS Implicit Dual Time-Stepping Algorithm for Hybrid Dynamic Meshes. , 2003, , .		1
130	High-Order Adaptive Quadrature-Free Spectral Volume Method on Unstructured Grids. , 2008, , .		1
131	Partition Design and Optimization for High-Order Spectral Volume Schemes on Tetrahedral Grids. , 2010, , .		1
132	A preconditioned pâ€multigrid solution approach for the highâ€order flux reconstruction method. International Journal for Numerical Methods in Fluids, 2022, 94, 1379-1397.	1.6	1
133	Numerical simulation of acoustic waves in a combustor using total-variation-diminishing schemes. AIAA Journal, 1994, 32, 875-878.	2.6	0
134	NUMERICAL EXPERIMENTS OF THE SPECTRAL VOLUME METHOD FOR VISCOUS FLOWS. Modern Physics Letters B, 2005, 19, 1439-1442.	1.9	0
135	A $$P_N P_M{-} CPR $$ P N P M - C P R Framework for Hyperbolic Conservation Laws. Journal of Scientific Computing, 2014, 61, 281-307.	2.3	0
136	The spectral volume method for the Euler equations with high-order boundary representations. , 2003, , 1193-1196.		0
137	Spectral (Finite) Volume Method for the One Dimensional Euler Equations. , 2003, , 235-240.		0
138	A Comparison of Approximate vs. Exact Geometrical Representations of Roughness for CFD Calculations of CF and ST. , 2005, , .		0
139	Computation of Aeroacoustic Waves with High Order Spectral Volume Method. , 2006, , 441-447.		0