

Claus-Dieter Munz

List of Publications by Year in descending order

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110
papers

3,406
citations

201575

27
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143943

57
g-index

119
all docs

119
docs citations

119
times ranked

1849
citing authors

#	ARTICLE	IF	CITATIONS
1	A p-Adaptive Discontinuous Galerkin Method with hp-Shock Capturing. Journal of Scientific Computing, 2022, 91, 1.	1.1	6
2	Zonal Hybrid Computational Aeroacoustics Simulation of Trailing Edge Noise Using a High-Order Discontinuous Galerkin Method. , 2022, , .		1
3	FLEXI: A high order discontinuous Galerkin framework for hyperbolic-parabolic conservation laws. Computers and Mathematics With Applications, 2021, 81, 186-219.	1.4	69
4	Atomistic Simulations: The Driving Force Behind Modern Thermodynamic Research. , 2021, , 569-581.		0
5	Recent Advances and Complex Applications of the Compressible Ghost-Fluid Method. SEMA SIMAI Springer Series, 2021, , 155-176.	0.4	5
6	An efficient sliding mesh interface method for high-order discontinuous Galerkin schemes. Computers and Fluids, 2021, 217, 104825.	1.3	12
7	Comparison of macro- and microscopic solutions of the Riemann problem II. Two-phase shock tube. Journal of Computational Physics, 2021, 429, 110027.	1.9	13
8	A high-order stochastic Galerkin code for the compressible Euler and Navier-Stokes equations. Computers and Fluids, 2021, 228, 105039.	1.3	2
9	Uncertainty Quantification in High Performance Computational Fluid Dynamics. , 2021, , 355-371.		0
10	An Approximate Riemann Solver for Advection-Diffusion Based on the Generalized Riemann Problem. Communications on Applied Mathematics and Computation, 2020, 2, 515-539.	0.7	4
11	Comparison of macro- and microscopic solutions of the Riemann problem I. Supercritical shock tube and expansion into vacuum. Journal of Computational Physics, 2020, 402, 109077.	1.9	14
12	A parabolic relaxation model for the Navier-Stokes-Korteweg equations. Journal of Computational Physics, 2020, 421, 109714.	1.9	10
13	hp-Multilevel Monte Carlo Methods for Uncertainty Quantification of Compressible Navier-Stokes Equations. SIAM Journal of Scientific Computing, 2020, 42, B1067-B1091.	1.3	4
14	Improvement of the Level-Set Ghost-Fluid Method for the Compressible Euler Equations. Fluid Mechanics and Its Applications, 2020, , 17-29.	0.1	4
15	Godunov-Type Schemes for Diffusion and Advection-Diffusion. , 2020, , 209-215.		0
16	Uncertainty Quantification for Direct Aeroacoustic Simulations of Cavity Flows. Journal of Theoretical and Computational Acoustics, 2019, 27, 1850044.	0.5	10
17	Deep neural networks for data-driven LES closure models. Journal of Computational Physics, 2019, 398, 108910.	1.9	175
18	High-order Particle-In-Cell simulations of laser-plasma interaction. European Physical Journal: Special Topics, 2019, 227, 1603-1614.	1.2	6

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19	A particle localization algorithm on unstructured curvilinear polynomial meshes. Computer Physics Communications, 2019, 235, 63-74.	3.0	8
20	Application and Development of the High Order Discontinuous Galerkin Spectral Element Method for Compressible Multiscale Flows. , 2019, , 291-307.		1
21	Application and Development of the High Order Discontinuous Galerkin Spectral Element Method for Compressible Multiscale Flows. , 2018, , 387-407.		4
22	Approximate Riemann solver for compressible liquid vapor flow with phase transition and surface tension. Computers and Fluids, 2018, 169, 169-185.	1.3	26
23	Hybrid DG/FV schemes for magnetohydrodynamics and relativistic hydrodynamics. Computer Physics Communications, 2018, 222, 113-135.	3.0	15
24	Efficient high-order discontinuous Galerkin computations of low Mach number flows. Communications in Applied Mathematics and Computational Science, 2018, 13, 243-270.	0.7	10
25	Direct Aeroacoustic Simulations Based on High Order Discontinuous Galerkin Schemes. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2018, , 159-204.	0.3	6
26	Complex-Frequency Shifted PMLs for Maxwell's Equations With Hyperbolic Divergence Cleaning and Their Application in Particle-in-Cell Codes. IEEE Transactions on Plasma Science, 2017, 45, 2-14.	0.6	8
27	A sharp interface method for compressible liquid-vapor flow with phase transition and surface tension. Journal of Computational Physics, 2017, 336, 347-374.	1.9	41
28	COMPARISON of SUBCRITICAL INTERFACE APPROXIMATIONS at HIGH TEMPERATURE and PRESSURE CONDITIONS. , 2017, , .		0
29	Efficient Parallelization of a Shock Capturing for Discontinuous Galerkin Methods using Finite Volume Sub-cells. Journal of Scientific Computing, 2017, 70, 1262-1289.	1.1	74
30	Aeroacoustic Tonal Noise Generation Analysis on a Simplified Side-View Mirror Using a High Order Discontinuous Galerkin Spectral Element Method. , 2016, , .		0
31	High-Pressure Real-Gas Jet and Throttle Flow as a Simplified Gas Injector Model Using a Discontinuous Galerkin Method. , 2016, , 289-300.		1
32	Implicit time integration for particle treatment within a Particle-in-Cell solver. , 2016, , .		0
33	Leading-Edge Receptivity to Free-Stream Vorticity of Streamwise Corner-Flow. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2016, , 259-268.	0.2	0
34	PIC-DSMC simulations of plasma plume expansions with ionization and recombination processes. , 2016, , .		0
35	xtroem-fv: a new code for computational astrophysics based on very high order finite-volume methods II. Relativistic hydro- and magnetohydrodynamics. Monthly Notices of the Royal Astronomical Society, 2016, 460, 535-559.	1.6	16
36	Large eddy simulation of tonal noise at a side-view mirror using a high order discontinuous Galerkin method. , 2016, , .		5

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37	Simulation of underresolved turbulent flows by adaptive filtering using the high order discontinuous Galerkin spectral element method. <i>Journal of Computational Physics</i> , 2016, 313, 1-12.	1.9	53
38	xtroem-fv: a new code for computational astrophysics based on very high order finite-volume methods â€” I. Magnetohydrodynamics. <i>Monthly Notices of the Royal Astronomical Society</i> , 2016, 455, 3458-3479.	1.6	15
39	Direct aeroacoustic simulation of acoustic feedback phenomena on a side-view mirror. <i>Journal of Sound and Vibration</i> , 2016, 371, 132-149.	2.1	30
40	On the Influence of Polynomial De-aliasing on Subgrid Scale Models. <i>Flow, Turbulence and Combustion</i> , 2016, 97, 475-511.	1.4	24
41	High Fidelity Scale-Resolving Computational Fluid Dynamics Using the High Order Discontinuous Galerkin Spectral Element Method. , 2016, , 511-530.		2
42	Toward a Discontinuous Galerkin Fluid Dynamics Framework for Industrial Applications. , 2016, , 531-545.		1
43	A spaceâ€”time adaptive discontinuous Galerkin scheme. <i>Computers and Fluids</i> , 2015, 117, 247-261.	1.3	14
44	Complex-frequency shifted perfectly matched layers with respect to particle treatment in a particle-in-cell scheme. , 2015, , .		0
45	Three-dimensional, high-order semi-implicit particle-in-cell solver based on a Discontinuous Galerkin Spectral Element Method. , 2015, , .		0
46	Coupling of compressible and incompressible flow regions using the multiple pressure variables approach. <i>Mathematical Methods in the Applied Sciences</i> , 2015, 38, 458-477.	1.2	9
47	Discontinuous Galerkin for High Performance Computational Fluid Dynamics. , 2015, , 499-518.		3
48	Underresolved Turbulence Simulations with Stabilized High Order Discontinuous Galerkin Methods. <i>ERCOFTAC Series</i> , 2015, , 103-108.	0.1	2
49	Highâ€”order discontinuous Galerkin spectral element methods for transitional and turbulent flow simulations. <i>International Journal for Numerical Methods in Fluids</i> , 2014, 76, 522-548.	0.9	169
50	A Discontinuous Galerkin Spectral Element Method for the direct numerical simulation of aeroacoustics. , 2014, , .		16
51	Coupled Particle-In-Cell and Direct Simulation Monte Carlo method for simulating reactive plasma flows. <i>Comptes Rendus - Mecanique</i> , 2014, 342, 662-670.	2.1	56
52	Improving the accuracy of discontinuous Galerkin schemes at boundary layers. <i>International Journal for Numerical Methods in Fluids</i> , 2014, 75, 385-402.	0.9	5
53	On the Effect of Flux Functions in Discontinuous Galerkin Simulations of Underresolved Turbulence. <i>Lecture Notes in Computational Science and Engineering</i> , 2014, , 145-155.	0.1	4
54	Shock Capturing for Discontinuous Galerkin Methods using Finite Volume Subcells. <i>Springer Proceedings in Mathematics and Statistics</i> , 2014, , 945-953.	0.1	20

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55	A Combined Finite Volume Discontinuous Galerkin Approach for the Sharp-Interface Tracking in Multi-Phase Flow. Springer Proceedings in Mathematics and Statistics, 2014, , 911-918.	0.1	0
56	Efficient implementation of high order unstructured WENO schemes for cavitating flows. Computers and Fluids, 2013, 86, 141-168.	1.3	53
57	Efficient Parallelization of a Three-Dimensional High-Order Particle-in-Cell Method for the Simulation of a 170 GHz Gyrotron Resonator. IEEE Transactions on Plasma Science, 2013, 41, 87-98.	0.6	14
58	Discontinuous Galerkin for High Performance Computational Fluid Dynamics. , 2013, , 225-238.		1
59	Preconditioning for modal discontinuous Galerkin methods for unsteady 3D Navier-Stokes equations. Journal of Computational Physics, 2013, 240, 20-35.	1.9	36
60	The Application of Iterated Defect Corrections Based on WENO Reconstruction. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2013, , 129-154.	0.2	0
61	An Efficient High Performance Parallelization of a Discontinuous Galerkin Spectral Element Method. Lecture Notes in Computer Science, 2013, , 37-47.	1.0	10
62	Enhanced Accuracy for Finite-Volume and Discontinuous Galerkin Schemes via Non-intrusive Corrections. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2013, , 267-282.	0.2	0
63	Discontinuous Galerkin Schemes for the Direct Numerical Simulation of Fluid Flow and Acoustics. , 2012, , .		5
64	Direct Noise Simulation of Near Field Noise during a Gas Injection Process with a Discontinuous Galerkin Approach. , 2012, , .		1
65	On the Numerical Simulation of a Scramjet Intake using a Space-Time-Expansion Discontinuous Galerkin Scheme. , 2012, , .		0
66	Three-Dimensional Numerical Simulation of a 30-GHz Gyrotron Resonator With an Explicit High-Order Discontinuous-Galerkin-Based Parallel Particle-In-Cell Method. IEEE Transactions on Plasma Science, 2012, 40, 1860-1870.	0.6	63
67	Numerical Investigation of High-Order Gyrotron Mode Propagation in Launchers at 170 GHz. IEEE Transactions on Plasma Science, 2012, 40, 1512-1521.	0.6	4
68	Discontinuous Galerkin schemes with defect corrections based on reconstruction. Computers and Fluids, 2012, 62, 71-85.	1.3	2
69	Explicit discontinuous Galerkin methods for unsteady problems. Computers and Fluids, 2012, 61, 86-93.	1.3	167
70	Visualization of Advection-Diffusion in Unsteady Fluid Flow. Computer Graphics Forum, 2012, 31, 1105-1114.	1.8	9
71	Discontinuous Galerkin for High Performance Computational Fluid Dynamics (hpcdg). , 2012, , 277-288.		1
72	Highly Efficient and Scalable Software for the Simulation of Turbulent Flows in Complex Geometries. , 2012, , 289-307.		3

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73	Unstructured three-dimensional High Order Grids for Discontinuous Galerkin Schemes. , 2011, , .		3
74	A RUNGE-KUTTA BASED DISCONTINUOUS GALERKIN METHOD WITH TIME ACCURATE LOCAL TIME STEPPING. Advances in Computational Fluid Dynamics, 2011, , 95-118.	0.1	12
75	A High Order Sharp-Interface Method with Local Time Stepping for Compressible Multiphase Flows. Communications in Computational Physics, 2011, 9, 205-230.	0.7	13
76	Explicit one-step time discretizations for discontinuous Galerkin and finite volume schemes based on local predictors. Journal of Computational Physics, 2011, 230, 4232-4247.	1.9	61
77	Local Time-Stepping for Explicit Discontinuous Galerkin Schemes. , 2011, , 171-177.		0
78	Advances in the Computational Aeroacoustics with the Discontinuous Galerkin Solver NoisSol. , 2010, , .		5
79	Explicit One-Step Discontinuous Galerkin Schemes for Unsteady Flow Simulations. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2010, , 53-65.	0.2	0
80	A high-order discontinuous Galerkin method with time-accurate local time stepping for the Maxwell equations. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2009, 22, 77-103.	1.2	54
81	Polymorphic nodal elements and their application in discontinuous Galerkin methods. Journal of Computational Physics, 2009, 228, 1573-1590.	1.9	73
82	Efficient, high accuracy ADER-WENO schemes for hydrodynamics and divergence-free magneto hydrodynamics. Journal of Computational Physics, 2009, 228, 2480-2516.	1.9	209
83	A Space-Time Expansion Discontinuous Galerkin Scheme With Local Time Stepping for the Ideal and Viscous MHD Equations. IEEE Transactions on Plasma Science, 2009, 37, 513-519.	0.6	2
84	Fluid-Acoustic Coupling and Wave Propagation. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2009, , 47-74.	0.2	4
85	A Numerical Diffusion Flux Based on the Diffusive Riemannproblem. , 2009, , 127-132.		0
86	Arbitrary High Order Finite Volume Schemes on Unstructured Meshes. , 2009, , 221-227.		0
87	An explicit discontinuous Galerkin scheme with local time-stepping for general unsteady diffusion equations. Journal of Computational Physics, 2008, 227, 5649-5670.	1.9	41
88	A unified framework for the construction of one-step finite volume and discontinuous Galerkin schemes on unstructured meshes. Journal of Computational Physics, 2008, 227, 8209-8253.	1.9	761
89	Aeroacoustic study of a forward facing step using linearized Euler equations. Physica D: Nonlinear Phenomena, 2008, 237, 2184-2189.	1.3	13
90	Building Blocks for Direct Aeroacoustic Simulations based on Domain Decompositions. , 2008, , .		0

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91	On Source Terms and Boundary Conditions Using Arbitrary High Order Discontinuous Galerkin Schemes. International Journal of Applied Mathematics and Computer Science, 2007, 17, 297-310.	1.5	7
92	Domain Decompositions for CAA in Complex Domains. , 2007, , .		1
93	Coupling of LES with LEE for Forward Facing Step Noise Prediction. , 2007, , .		1
94	A contribution to the construction of diffusion fluxes for finite volume and discontinuous Galerkin schemes. Journal of Computational Physics, 2007, 224, 1049-1063.	1.9	165
95	Linearized acoustic perturbation equations for low Mach number flow with variable density and temperature. Journal of Computational Physics, 2007, 224, 352-364.	1.9	61
96	A sub-cell based indicator for troubled zones in RKDG schemes and a novel class of hybrid RKDG+HWENO schemes. Journal of Computational Physics, 2007, 226, 586-620.	1.9	105
97	Arbitrary High-Order Discontinuous Galerkin Schemes for the Magnetohydrodynamic Equations. Journal of Scientific Computing, 2007, 30, 441-464.	1.1	37
98	Building Blocks for Arbitrary High Order Discontinuous Galerkin Schemes. Journal of Scientific Computing, 2006, 27, 215-230.	1.1	131
99	The numerical modeling of acoustic wave propagation using the multiple pressure variables approach. Computing and Visualization in Science, 2006, 9, 229-237.	1.2	1
100	Lax-Wendroff-type schemes of arbitrary order in several space dimensions. IMA Journal of Numerical Analysis, 2006, 27, 593-615.	1.5	10
101	Heterogeneous Domain Decomposition for Numerical Aeroacoustics. , 2006, , 429-459.		3
102	Calculation of low Mach number acoustics: a comparison of MPV, EIF and linearized Euler equations. ESAIM: Mathematical Modelling and Numerical Analysis, 2005, 39, 561-576.	0.8	9
103	ADER discontinuous Galerkin schemes for aeroacoustics. Comptes Rendus - Mecanique, 2005, 333, 683-687.	2.1	78
104	Heterogeneous Domain Decomposition for CAA. , 2005, , .		5
105	Fast high order ADER schemes for linear hyperbolic equations. Journal of Computational Physics, 2004, 197, 532-539.	1.9	99
106	CAA Using Domain Decomposition and High Order Methods on Structured and Unstructured Meshes. , 2004, , .		5
107	A low Mach number scheme based on multi-scale asymptotics. Computing and Visualization in Science, 2000, 3, 85-91.	1.2	36
108	Approximate Riemann Solvers for Fluid Flow with Material Interfaces. Fluid Mechanics and Its Applications, 1998, , 211-235.	0.1	2

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109	On the numerical dissipation of high resolution schemes for hyperbolic conservation laws. Journal of Computational Physics, 1988, 77, 18-39.	1.9	39
110	Expansion rates of bubble clusters in superheated liquids. , 0, , .		2