Weizhang Huang

List of Publications by Year
in descending order

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94 papers	3,233 citations	136950 32 h-index	155660 55 g-index
104 all docs	104 docs citations	104 times ranked	1178 citing authors

#	Article	IF	Citations
1	Exploring the Effects of Prescribed Fire on Tick Spread and Propagation in a Spatial Setting. Computational and Mathematical Methods in Medicine, 2022, 2022, 1-14.	1.3	3
2	A Parallel Variational Mesh Quality Improvement Method for Tetrahedral Meshes Based on the MMPDE Method. CAD Computer Aided Design, 2022, 148, 103242.	2.7	2
3	A Quasi-Conservative Discontinuous Galerkin Method for Multi-component Flows Using the Non-oscillatory Kinetic Flux II: ALE Framework. Journal of Scientific Computing, 2022, 90, 1.	2.3	4
4	A metric tensor approach to data assimilation with adaptive moving meshes. Journal of Computational Physics, 2022, 466, 111407.	3.8	2
5	Conditioning of implicit Rungeâ€“Kutta integration for finite element approximation of linear diffusion equations on anisotropic meshes. Journal of Computational and Applied Mathematics, 2021, 387, 112497.	2.0	4
6	Domain decomposition parabolic Mongeâ€“AmpÃ¨re approach for fast generation of adaptive moving meshes. Computers and Mathematics With Applications, 2021, 84, 97-111.	2.7	2
7	A High-Order Well-Balanced Positivity-Preserving Moving Mesh DG Method for the Shallow Water Equations With Non-Flat Bottom Topography. Journal of Scientific Computing, 2021, 87, 1.	2.3	9
8	An adaptive spot placement method on Cartesian grid for pencil beam scanning proton therapy. Physics in Medicine and Biology, 2021, 66, 235012.	3.0	2
9	A surface moving mesh method based on equidistribution and alignment. Journal of Computational Physics, 2020, 403, 109097.	3.8	2
10	High-Order Conservative Positivity-Preserving DG-Interpolation for Deforming Meshes and Application to Moving Mesh DG Simulation of Radiative Transfer. SIAM Journal of Scientific Computing, 2020, 42, A3109-A3135.	2.8	9
11	Anisotropic mesh quality measures and adaptation for polygonal meshes. Journal of Computational Physics, 2020, 410, 109368.	3.8	3
12	A quasi-Lagrangian moving mesh discontinuous Galerkin method for hyperbolic conservation laws. Journal of Computational Physics, 2019, 396, 544-578.	3.8	14
13	Adaptive finite element solution of the porous medium equation in pressure formulation. Numerical Methods for Partial Differential Equations, 2019, 35, 1224-1242.	3.6	2
14	Conditioning of the finite volume element method for diffusion problems with general simplicial meshes. Mathematics of Computation, 2019, 88, 2665-2696.	2.1	6
15	Moving mesh finite difference solution of non-equilibrium radiation diffusion equations. Numerical Algorithms, 2019, 82, 1409-1440.	1.9	1
16	On the mesh nonsingularity of the moving mesh PDE method. Mathematics of Computation, 2018, 87, 1887-1911.	2.1	31
17	An Adaptive Moving Mesh Finite Element Solution of the Regularized Long Wave Equation. Journal of Scientific Computing, 2018, 74, 122-144.	2.3	12
18	Moving mesh finite element simulation for phase-field modeling of brittle fracture and convergence of Newton's iteration. Journal of Computational Physics, 2018, 356, 127-149.	3.8	21

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19	A new functional for variational mesh generation and adaptation based on equidistribution and alignment conditions. Computers and Mathematics With Applications, 2018, 75, 2044-2058.	2.7	4
20	Moving mesh simulation of contact sets in two dimensional models of elasticâ€“electrostatic deflection problems. Journal of Computational Physics, 2018, 375, 763-782.	3.8	4
21	Control of Multi-Agent Collaborative Fixed-Wing UASs in Unstructured Environment. , 2018, , .		1
22	Validation and Verification Flight Tests of Fixed-Wing Collaborative UASs with High Speeds and High Inertias. , 2018, , .		3
23	A study on moving mesh finite element solution of the porous medium equation. Journal of Computational Physics, 2017, 331, 357-380.	3.8	23
24	Anisotropic Mesh Adaptation for 3D Anisotropic Diffusion Problems with Application to Fractured Reservoir Simulation. Numerical Mathematics, 2017, 10, 913-940.	1.3	1
25	A third-order moving mesh cell-centered scheme for one-dimensional elastic-plastic flows. Journal of Computational Physics, 2017, 349, 137-153.	3.8	5
26	A study on nonnegativity preservation in finite element approximation of Nagumo-type nonlinear differential equations. Applied Mathematics and Computation, 2017, 309, 49-67.	2.2	6
27	Monotone Finite Difference Schemes for Anisotropic Diffusion Problems via Nonnegative Directional Splittings. Communications in Computational Physics, 2016, 19, 473-495.	1.7	3
28	Guidance of Multi-Agent Fixed-Wing Aircraft Using a Moving Mesh Method. Unmanned Systems, 2016, 04, 227-244.	3.6	3
29	Image Segmentation With Eigenfunctions of an Anisotropic Diffusion Operator. IEEE Transactions on Image Processing, 2016, 25, 2155-2167.	9.8	7
30	Stability of Explicit One-Step Methods for P1-Finite Element Approximation of Linear Diffusion Equations on Anisotropic Meshes. SIAM Journal on Numerical Analysis, 2016, 54, 1612-1634.	2.3	7
31	A hybrid LDG-HWENO scheme for KdV-type equations. Journal of Computational Physics, 2016, 313, 754-774.	3.8	12
32	A posteriori error analysis for finite element solution of one-dimensional elliptic differential equations using equidistributing meshes. Journal of Computational and Applied Mathematics, 2016, 299, 101-126.	2.0	3
33	Discrete Maximum Principle for the Weak Galerkin Method for Anisotropic Diffusion Problems. Communications in Computational Physics, 2015, 18, 65-90.	1.7	18
34	A Study on Anisotropic Mesh Adaptation for Finite Element Approximation of Eigenvalue Problems with Anisotropic Diffusion Operators. SIAM Journal of Scientific Computing, 2015, 37, A2924-A2946.	2.8	1
35	A moving mesh finite difference method for equilibrium radiation diffusion equations. Journal of Computational Physics, 2015, 298, 661-677.	3.8	11
36	Computation of eigenvalue problems with anisotropic diffusion operators. AIP Conference Proceedings, 2015, , .	0.4	0

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37	Guidance of multi-agent fixed-wing aircraft using a moving mesh method. , 2015, , .		1
38	A geometric discretization and a simple implementation for variational mesh generation and adaptation. Journal of Computational Physics, 2015, 301, 322-337.	3.8	38
39	Unconditionally stable high-order time integration for moving mesh finite difference solution of linear convectionâ€“diffusion equations. International Journal of Computer Mathematics, 2015, 92, 1180-1203.	1.8	3
40	How a Nonconvergent Recovered Hessian Works in Mesh Adaptation. SIAM Journal on Numerical Analysis, 2014, 52, 1692-1708.	2.3	15
41	Sign-preserving of principal eigenfunctions in P1 finite element approximation of eigenvalue problems of second-order elliptic operators. Journal of Computational Physics, 2014, 274, 230-244.	3.8	8
42	Maximum principle in linear finite element approximations of anisotropic diffusionâ€“convectionâ€“reaction problems. Numerische Mathematik, 2014, 127, 515-537.	1.9	33
43	Conditioning of finite element equations with arbitrary anisotropic meshes. Mathematics of Computation, 2014, 83, 2187-2211.	2.1	31
44	Maximum principle for the finite element solution of timeâ€dependent anisotropic diffusion problems. Numerical Methods for Partial Differential Equations, 2013, 29, 1963-1985.	3.6	16
45	The cutoff method for the numerical computation of nonnegative solutions of parabolic PDEs with application to anisotropic diffusion and Lubrication-type equations. Journal of Computational Physics, 2013, 242, 24-36.	3.8	35
46	A Numerical Study of Blowup in the Harmonic Map Heat Flow Using the MMPDE Moving Mesh Method. Numerical Mathematics, 2013, 6, 364-383.	1.3	5
47	A Moving Mesh WENO Method for One-Dimensional Conservation Laws. SIAM Journal of Scientific Computing, 2012, 34, A2317-A2343.	2.8	22
48	Analysis of a moving collocation method for one-dimensional partial differential equations. Science China Mathematics, 2012, 55, 827-840.	1.7	4
49	An <mml:math altimg="si4.gif" display="inline" overflow="scroll" xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML" xmlns:tb="http://www.elsevier.com/xml/common/table/dtd" xmlns:sb="http://www.elsevier.com/xml/common/struct-bib/dtd" xmlns:ce="http://www.elsevier.com/x	2.0	2
50	Adaptive Moving Mesh Methods. Applied Mathematical Sciences (Switzerland), 2011, , .	0.8	170
51	Discrete Maximum Principle and a Delaunay-Type Mesh Condition for Linear Finite Element Approximations of Two-Dimensional Anisotropic Diffusion Problems. Numerical Mathematics, 2011, 4, 319-334.	1.3	25
52	Convergence of de Boor's algorithm for the generation of equidistributing meshes. IMA Journal of Numerical Analysis, 2011, 31, 580-596.	2.9	31
53	A new anisotropic mesh adaptation method based upon hierarchical a posteriori error estimates. Journal of Computational Physics, 2010, 229, 2179-2198.	3.8	35
54	An anisotropic mesh adaptation method for the finite element solution of heterogeneous anisotropic diffusion problems. Journal of Computational Physics, 2010, 229, 8072-8094.	3.8	44

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55	An anisotropic mesh adaptation method for the finite element solution of variational problems. Finite Elements in Analysis and Design, 2010, 46, 61-73.	3.2	10
56	Adaptivity with moving grids. Acta Numerica, 2009, 18, 111-241.	10.7	189
57	A study of moving mesh PDE methods for numerical simulation of blowup in reaction diffusion equations. Journal of Computational Physics, 2008, 227, 6532-6552.	3.8	47
58	Metric tensors for anisotropic mesh generation. Journal of Computational Physics, 2005, 204, 633-665.	3.8	129
59	Measuring Mesh Qualities and Application to Variational Mesh Adaptation. SIAM Journal of Scientific Computing, 2005, 26, 1643-1666.	2.8	40
60	Preconditioning for the Dynamic Simulation of Reaction-Transport Systems. Industrial & Engineering Chemistry Research, 2005, 44, 5680-5690.	3.7	0
61	Variational mesh adaptation II: error estimates and monitor functions. Journal of Computational Physics, 2003, 184, 619-648.	3.8	87
62	A two-dimensional moving finite element method with local refinement based on a posteriori error estimates. Applied Numerical Mathematics, 2003, 46, 75-94.	2.1	43
63	Approaches for generating moving adaptive meshes: location versus velocity. Applied Numerical Mathematics, 2003, 47, 121-138.	2.1	38
64	Variational Mesh Adaptation Methods for Axisymmetrical Problems. SIAM Journal on Numerical Analysis, 2003, 41, 235-257.	2.3	5
65	Convergence Analysis of Spectral Collocation Methods for a Singular Differential Equation. SIAM Journal on Numerical Analysis, 2003, 41, 2333-2349.	2.3	16
66	A Moving Mesh Method Based on the Geometric Conservation Law. SIAM Journal of Scientific Computing, 2002, 24, 118-142.	2.8	56
67	Adaptive moving mesh methods for simulating one-dimensional groundwater problems with sharp moving fronts. International Journal for Numerical Methods in Engineering, 2002, 54, 1579-1603.	2.8	20
68	Adaptive mesh movement â€" the MMPDE approach and its applications. Journal of Computational and Applied Mathematics, 2001, 128, 383-398.	2.0	39
69	Comparison of two-dimensional r-adaptive finite element methods using various error indicators. Mathematics and Computers in Simulation, 2001, 56, 127-143.	4.4	15
70	An Error Indicator Monitor Function for an r-Adaptive Finite-Element Method. Journal of Computational Physics, 2001, 170, 871-892.	3.8	16
71	Practical Aspects of Formulation and Solution of Moving Mesh Partial Differential Equations. Journal of Computational Physics, 2001, 171, 753-775.	3.8	107
72	Variational Mesh Adaptation: Isotropy and Equidistribution. Journal of Computational Physics, 2001, 174, 903-924.	3.8	90

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73	Adaptive mesh movement â€" the MMPDE approach and its applications. , 2001, , 383-398.		0
74	Pseudospectral solutions for steady motion of a viscous fluid inside a circular boundary. Applied Numerical Mathematics, 2000, 33, 167-173.	2.1	5
75	Anr-Adaptive Finite Element Method Based upon Moving Mesh PDEs. Journal of Computational Physics, 1999, 149, 221-244.	3.8	130
76	A moving mesh method in multiblock domains with application to a combustion problem. Numerical Methods for Partial Differential Equations, 1999, 15, 449-467.	3.6	11
77	A Study of Monitor Functions for Two-Dimensional Adaptive Mesh Generation. SIAM Journal of Scientific Computing, 1999, 20, 1978-1994.	2.8	91
78	A high dimensional moving mesh strategy. Applied Numerical Mathematics, 1998, 26, 63-76.	2.1	43
79	Moving Mesh Strategy Based on a Gradient Flow Equation for Two-Dimensional Problems. SIAM Journal of Scientific Computing, 1998, 20, 998-1015.	2.8	107
80	Analysis of Moving Mesh Partial Differential Equations with Spatial Smoothing. SIAM Journal on Numerical Analysis, 1997, 34, 1106-1126.	2.3	72
81	The Adaptive Verlet Method. SIAM Journal of Scientific Computing, 1997, 18, 239-256.	2.8	84
82	Geometric Integrators for Classical Spin Systems. Journal of Computational Physics, 1997, 133, 160-172.	3.8	48
83	Finite Difference Preconditioning for Solving Orthogonal Collocation Equations for Boundary Value Problems. SIAM Journal on Numerical Analysis, 1996, 33, 2268-2285.	2.3	10
84	Moving Mesh Methods for Problems with Blow-Up. SIAM Journal of Scientific Computing, 1996, 17, 305-327.	2.8	147
85	A moving collocation method for solving time dependent partial differential equations. Applied Numerical Mathematics, 1996, 20, 101-116.	2.1	55
86	Moving Finite Elements (M. J. Baines). SIAM Review, 1996, 38, 530-531.	9.5	1
87	A Simple Adaptive Grid Method in Two Dimensions. SIAM Journal of Scientific Computing, 1994, 15, 776-797.	2.8	58
88	The Pseudospectral Method for Solving Differential Eigenvalue Problems. Journal of Computational Physics, 1994, 111, 399-409.	3.8	61
89	Moving Mesh Methods Based on Moving Mesh Partial Differential Equations. Journal of Computational Physics, 1994, 113, 279-290.	3.8	173
90	Moving Mesh Partial Differential Equations (MMPDES) Based on the Equidistribution Principle. SIAM Journal on Numerical Analysis, 1994, 31, 709-730.	2.3	287

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91	Pole Condition for Singular Problems: The Pseudospectral Approximation. Journal of Computational Physics, 1993, 107, 254-261.	3.8	57
92	A new pseudospectral method with upwind features. IMA Journal of Numerical Analysis, 1993, 13, 413-430.	2.9	13
93	The Pseudospectral Method for Third-Order Differential Equations. SIAM Journal on Numerical Analysis, 1992, 29, 1626-1647.	2.3	52
94	Convergence of Algebraic multigrid methods for symmetric positive definite matrices with weak diagonal dominance. Applied Mathematics and Computation, 1991, 46, 145-164.	2.2	8