Zhen Luo

List of Publications by Year
in descending order

110 papers	5,280 citations	81839 39 h-index	91828 69 g-index
111 all docs	111 docs citations	111 times ranked	2267 citing authors

#	ARTICLE	IF	CITATIONS
1	Stability of the planar rarefaction wave to three-dimensional full compressible Navier-Stokes-Korteweg equations. Journal of Differential Equations, 2022, 327, 382-417.	1.1	1
2	Engineering three-dimensional labyrinthine fractal acoustic metamaterials with low-frequency multi-band sound suppression. Journal of the Acoustical Society of America, 2021, 149, 308-319.	0.5	12
3	Topological design of pentamode lattice metamaterials using a ground structure method. Materials and Design, 2021, 202, 109523.	3.3	46
4	Topological design of pentamode metamaterials with additive manufacturing. Computer Methods in Applied Mechanics and Engineering, 2021, 377, 113708.	3.4	24
5	Stability of the planar rarefaction wave to three-dimensional Navier–Stokes–Korteweg equations of compressible fluids. Nonlinearity, 2021, 34, 2689-2714.	0.6	4
6	Concurrent design for structures and material microstructures under hybrid uncertainties. Materials and Design, 2021, 205, 109728.	3.3	4
7	A multi-objective optimization of stent geometries. Journal of Biomechanics, 2021, 125, 110575.	0.9	8
8	IgaTop: an implementation of topology optimization for structures using IGA in MATLAB. Structural and Multidisciplinary Optimization, 2021, 64, 1669-1700.	1.7	21
9	Topological Optimization of Auxetic Coronary Stents Considering Hemodynamics. Frontiers in Bioengineering and Biotechnology, 2021, 9, 728914.	2.0	12
10	Design optimization of multifunctional metamaterials with tunable thermal expansion and phononic bandgap. Materials and Design, 2021, 209, 109990.	3.3	35
11	Machine learning aided phase field method for fracture mechanics. International Journal of Engineering Science, 2021, 169, 103587.	2.7	28
12	Shape matters—the interaction of gold nanoparticles with model lung surfactant monolayers. Journal of the Royal Society Interface, 2021, 18, 20210402.	1.5	5
13	Topological Design of Multi-Material Compliant Mechanisms with Global Stress Constraints. Micromachines, 2021, 12, 1379.	1.4	5
14	Topology Optimization of Micro-Structured Materials Featured with the Specific Mechanical Properties. International Journal of Computational Methods, 2020, 17, 1850144.	0.8	22
15	Self-supporting topology optimization method for selective laser melting. Additive Manufacturing, 2020, 36, 101506.	1.7	9
16	Design of Self-Expanding Auxetic Stents Using Topology Optimization. Frontiers in Bioengineering and Biotechnology, 2020, 8, 736.	2.0	24
17	A NURBS-based Multi-Material Interpolation (N-MMI) for isogeometric topology optimization of structures. Applied Mathematical Modelling, 2020, 81, 818-843.	2.2	49
18	Existence of strong solutions to the rotating shallow water equations with degenerate viscosities. Analysis and Applications, 2020, 18, 333-358.	1.2	1

#	ARTICLE	IF	CITATIONS
19	Stability of the planar rarefaction wave to two-dimensional Navier–Stokes–Korteweg equations of compressible fluids. Mathematical Methods in the Applied Sciences, 2020, 43, 3307-3330.	1.2	5
20	Design of Auxetic Coronary Stents by Topology Optimization. , 2020, , 17-31.		0
21	Concurrent topology optimization of multiscale composite structures in Matlab. Structural and Multidisciplinary Optimization, 2019, 60, 2621-2651.	1.7	90
22	A new multiscale topology optimization method for multiphase composite structures of frequency response with level sets. Computer Methods in Applied Mechanics and Engineering, 2019, 356, 116-144.	3.4	41
23	Hilbert fractal acoustic metamaterials with negative mass density and bulk modulus on subwavelength scale. Materials and Design, 2019, 180, 107911.	3.3	41
24	Isogeometric topology optimization for continuum structures using density distribution function. International Journal for Numerical Methods in Engineering, 2019, 119, 991-1017.	1.5	64
25	Topology optimization for auxetic metamaterials based on isogeometric analysis. Computer Methods in Applied Mechanics and Engineering, 2019, 352, 211-236.	3.4	107
26	Finite-time blow-up of classical solutions to the rotating shallow water system with degenerate viscosity. Zeitschrift Fur Angewandte Mathematik Und Physik, 2019, 70, 1.	0.7	5
27	3D Hilbert fractal acoustic metamaterials: low-frequency and multi-band sound insulation. Journal Physics D: Applied Physics, 2019, 52, 195302.	1.3	15
28	Dynamic multiscale topology optimization for multi-regional micro-structured cellular composites. Composite Structures, 2019, 211, 401-417.	3.1	39
29	Robust topology optimization for concurrent design of dynamic structures under hybrid uncertainties. Mechanical Systems and Signal Processing, 2019, 120, 540-559.	4.4	50
30	Topology optimization for multiscale design of porous composites with multi-domain microstructures. Computer Methods in Applied Mechanics and Engineering, 2019, 344, 451-476.	3.4	106
31	Level-set topology optimization for robust design of structures under hybrid uncertainties. International Journal for Numerical Methods in Engineering, 2019, 117, 523-542.	1.5	18
32	Space-coiling fractal metamaterial with multi-bandgaps on subwavelength scale. Journal of Sound and Vibration, 2018, 423, 322-339.	2.1	47
33	Non-probabilistic reliability-based topology optimization with multidimensional parallelepiped convex model. Structural and Multidisciplinary Optimization, 2018, 57, 2205-2221.	1.7	42
34	An arbitrary polynomial chaos expansion approach for response analysis of acoustic systems with epistemic uncertainty. Computer Methods in Applied Mechanics and Engineering, 2018, 332, 280-302.	3.4	32
35	Robust topology optimization for cellular composites with hybrid uncertainties. International Journal for Numerical Methods in Engineering, 2018, 115, 695-713.	1.5	29
36	Topology optimization for functionally graded cellular composites with metamaterials by level sets. Computer Methods in Applied Mechanics and Engineering, 2018, 328, 340-364.	3.4	141

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37	Robust topology optimization considering load uncertainty based on a semi-analytical method. International Journal of Advanced Manufacturing Technology, 2018, 94, 3537-3551.	1.5	5
38	A new method based on adaptive volume constraint and stress penalty for stress-constrained topology optimization. Structural and Multidisciplinary Optimization, 2018, 57, 1163-1185.	1.7	23
39	Stressâ€based multiâ€material topology optimization of compliant mechanisms. International Journal for Numerical Methods in Engineering, 2018, 113, 1021-1044.	1.5	68
40	Topology optimization for concurrent design of structures with multi-patch microstructures by level sets. Computer Methods in Applied Mechanics and Engineering, 2018, 331, 536-561.	3.4	139
41	An improved parametric level set method for structural frequency response optimization problems. Advances in Engineering Software, 2018, 126, 75-89.	1.8	18
42	Unified polynomial expansion for interval and random response analysis of uncertain structureâ€“acoustic system with arbitrary probability distribution. Computer Methods in Applied Mechanics and Engineering, 2018, 336, 260-285.	3.4	25
43	A new sequential sampling method for constructing the high-order polynomial surrogate models. Engineering Computations, 2018, 35, 529-564.	0.7	14
44	Level-set topology optimization for multimaterial and multifunctional mechanical metamaterials. Engineering Optimization, 2017, 49, 22-42.	1.5	60
45	A new hybrid uncertainty optimization method for structures using orthogonal series expansion. Applied Mathematical Modelling, 2017, 45, 474-490.	2.2	30
46	Topological design optimization of lattice structures to maximize shear stiffness. Advances in Engineering Software, 2017, 112, 211-221.	1.8	54
47	Level-set topology optimization for mechanical metamaterials under hybrid uncertainties. Computer Methods in Applied Mechanics and Engineering, 2017, 319, 414-441.	3.4	91
48	Uncertain dynamic analysis for rigid-flexible mechanisms with random geometry and material properties. Mechanical Systems and Signal Processing, 2017, 85, 487-511.	4.4	35
49	Zeroâ€viscosityâ€capillarity limit to rarefaction waves for the 1D compressible Navierâ€“Stokesâ€“Korteweg equations. Mathematical Methods in the Applied Sciences, 2016, 39, 5513-5528.	1.2	14
50	Incremental modeling of a new high-order polynomial surrogate model. Applied Mathematical Modelling, 2016, 40, 4681-4699.	2.2	54
51	Interval uncertain analysis of active hydraulically interconnected suspension system. Advances in Mechanical Engineering, 2016, 8, 168781401664633.	0.8	8
52	Dynamic computation of flexible multibody system with uncertain material properties. Nonlinear Dynamics, 2016, 85, 1231-1254.	2.7	17
53	Topological design for mechanical metamaterials using a multiphase level set method. Structural and Multidisciplinary Optimization, 2016, 54, 937-952.	1.7	21
54	Robust topology optimization for structures under interval uncertainty. Advances in Engineering Software, 2016, 99, 36-48.	1.8	68

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55	On the existence of local strong solutions to chemotaxisâ€"shallow water system with large data and vacuum. Journal of Differential Equations, 2016, 261, 6758-6789.	1.1	12
56	Integrated design of cellular composites using a level-set topology optimization method. Computer Methods in Applied Mechanics and Engineering, 2016, 309, 453-475.	3.4	72
57	Topological shape optimization of multifunctional tissue engineering scaffolds with level set method. Structural and Multidisciplinary Optimization, 2016, 54, 333-347.	1.7	18
58	The Interval Uncertain Optimization Strategy Based on Chebyshev Meta-model. Springer Proceedings in Mathematics and Statistics, 2015, , 203-216.	0.1	3
59	A new sampling scheme for developing metamodels with the zeros of Chebyshev polynomials. Engineering Optimization, 2015, 47, 1264-1288.	1.5	18
60	An efficient method for reliability analysis under epistemic uncertainty based on evidence theory and support vector regression. Journal of Engineering Design, 2015, 26, 340-364.	1.1	36
61	Subsonic non-isentropic Euler flows with large vorticity in axisymmetric nozzles. Journal of Mathematical Analysis and Applications, 2015, 430, 1037-1057.	0.5	14
62	Topology optimization of compliant mechanisms using element-free Galerkin method. Advances in Engineering Software, 2015, 85, 61-72.	1.8	21
63	Characteristic analysis of pitch-resistant hydraulically interconnected suspensions for two-axle vehicles. JVC/Journal of Vibration and Control, 2015, 21, 3167-3188.	1.5	17
64	A new methodology for multi-objective multidisciplinary design optimization problems based on game theory. Expert Systems With Applications, 2015, 42, 1602-1612.	4.4	46
65	A new interval uncertain optimization method for structures using Chebyshev surrogate models. Computers and Structures, 2015, 146, 185-196.	2.4	80
66	A multi-material level set-based topology and shape optimization method. Computer Methods in Applied Mechanics and Engineering, 2015, 283, 1570-1586.	3.4	208
67	A new uncertain analysis method and its application in vehicle dynamics. Mechanical Systems and Signal Processing, 2015, 50-51, 659-675.	4.4	114
68	An Element-Free Galerkin Method for Topology Optimization of Micro Compliant Mechanisms. Springer Proceedings in Mathematics and Statistics, 2015, , 217-226.	0.1	0
69	Topological design of compliant smart structures with embedded movable actuators. Smart Materials and Structures, 2014, 23, 045024.	1.8	59
70	Topology optimization of bi-modulus structures using the concept of bone remodeling. Engineering Computations, 2014, 31, 1361-1378.	0.7	7
71	An interval uncertain optimization method for vehicle suspensions using Chebyshev metamodels. Applied Mathematical Modelling, 2014, 38, 3706-3723.	2.2	72
72	Topological shape optimization of microstructural metamaterials using a level set method. Computational Materials Science, 2014, 87, 178-186.	1.4	151

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73	Global existence of classical solutions to two-dimensional Navier–Stokes equations with Cauchy data containing vacuum. Mathematical Methods in the Applied Sciences, 2014, 37, 1333-1352.	1.2	11
74	Topology optimization of structures using meshless density variable approximants. International Journal for Numerical Methods in Engineering, 2013, 93, 443-464.	1.5	83
75	An adaptive method for high-resolution topology design. Acta Mechanica Sinica/Lixue Xuebao, 2013, 29, 840-850.	1.5	13
76	A Chebyshev interval method for nonlinear dynamic systems under uncertainty. Applied Mathematical Modelling, 2013, 37, 4578-4591.	2.2	214
77	Three-dimensional full Euler flows in axisymmetric nozzles. Journal of Differential Equations, 2013, 254, 2705-2731.	1.1	32
78	Robust topology optimisation of bi-modulus structures. CAD Computer Aided Design, 2013, 45, 1159-1169.	1.4	11
79	An uncertain multidisciplinary design optimization method using interval convex models. Engineering Optimization, 2013, 45, 697-718.	1.5	33
80	Interval multi-objective optimisation of structures using adaptive Kriging approximations. Computers and Structures, 2013, 119, 68-84.	2.4	69
81	Interval uncertain method for multibody mechanical systems using Chebyshev inclusion functions. International Journal for Numerical Methods in Engineering, 2013, 95, 608-630.	1.5	169
82	Modelling and characteristic analysis of tri-axle trucks with hydraulically interconnected suspensions. Vehicle System Dynamics, 2012, 50, 1877-1904.	2.2	43
83	Topology Optimization for Static Shape Control of Piezoelectric Plates With Penalization on Intermediate Actuation Voltage. Journal of Mechanical Design, Transactions of the ASME, 2012, 134, .	1.7	22
84	Local Existence of Classical Solutions to Shallow Water Equations with Cauchy Data Containing Vacuum. SIAM Journal on Mathematical Analysis, 2012, 44, 541-567.	0.9	12
85	A numerical study on nonlinear vibration of an inclined cable coupled with the deck in cable-stayed bridges. JVC/Journal of Vibration and Control, 2012, 18, 404-416.	1.5	16
86	A meshfree level-set method for topological shape optimization of compliant multiphysics actuators. Computer Methods in Applied Mechanics and Engineering, 2012, 223-224, 133-152.	3.4	17
87	Optimization of foam-filled bitubal structures for crashworthiness criteria. Materials & Design, 2012, 38, 99-109.	5.1	162
88	Local existence of classical solutions to the two-dimensional viscous compressible flows with vacuum. Communications in Mathematical Sciences, 2012, 10, 527-554.	0.5	35
89	Shape morphing of laminated composite structures with photostrictive actuators via topology optimization. Composite Structures, 2011, 93, 406-418.	3.1	30
90	A variational principle and finite element formulation for multi-physics PLZT ceramics. Mechanics Research Communications, 2011, 38, 198-202.	1.0	10

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91	Design of Multi-phase Piezoelectric Actuators. Journal of Intelligent Material Systems and Structures, 2010, 21, 1851-1865.	1.4	48
92	A new multi-objective programming scheme for topology optimization of compliant mechanisms. Structural and Multidisciplinary Optimization, 2010, 40, 241-255.	1.7	39
93	Design of Adaptive Cores of Sandwich Structures Using a Compliant Unit Cell Approach and Topology Optimization. Journal of Mechanical Design, Transactions of the ASME, 2010, 132, .	1.7	10
94	Topology optimization for thermo-mechanical compliant actuators using mesh-free methods. Engineering Optimization, 2009, 41, 753-772.	1.5	39
95	Design of piezoelectric actuators using a multiphase level set method of piecewise constants. Journal of Computational Physics, 2009, 228, 2643-2659.	1.9	133
96	Continuum topology optimization with non-probabilistic reliability constraints based on multi-ellipsoid convex model. Structural and Multidisciplinary Optimization, 2009, 39, 297-310.	1.7	197
97	Shape and topology optimization for electrothermomechanical microactuators using level set methods. Journal of Computational Physics, 2009, 228, 3173-3181.	1.9	37
98	A level set method for structural shape and topology optimization using radial basis functions. Computers and Structures, 2009, 87, 425-434.	2.4	100
99	Design of distributed compliant micromechanisms with an implicit free boundary representation. Structural and Multidisciplinary Optimization, 2008, 36, 607-621.	1.7	12
100	Topology synthesis of geometrically nonlinear compliant mechanisms using meshless methods. Acta Mechanica Solida Sinica, 2008, 21, 51-61.	1.0	7
101	A level set–based parameterization method for structural shape and topology optimization. International Journal for Numerical Methods in Engineering, 2008, 76, 1-26.	1.5	222
102	A level set method for shape and topology optimization of large–displacement compliant mechanisms. International Journal for Numerical Methods in Engineering, 2008, 76, 862-892.	1.5	74
103	A semi-implicit level set method for structural shape and topology optimization. Journal of Computational Physics, 2008, 227, 5561-5581.	1.9	111
104	A new level set method for systematic design of hinge-free compliant mechanisms. Computer Methods in Applied Mechanics and Engineering, 2008, 198, 318-331.	3.4	120
105	Shape and topology optimization of compliant mechanisms using a parameterization level set method. Journal of Computational Physics, 2007, 227, 680-705.	1.9	178
106	A new procedure for aerodynamic missile designs using topological optimization approach of continuum structures. Aerospace Science and Technology, 2006, 10, 364-373.	2.5	40
107	Fuzzy tolerance multilevel approach for structural topology optimization. Computers and Structures, 2006, 84, 127-140.	2.4	35
108	Multiple stiffness topology optimizations of continuum structures. International Journal of Advanced Manufacturing Technology, 2006, 30, 203-214.	1.5	15

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109	THEORETICAL AND ALGORITHMIC ON TOPOLOGY OPTIMIZATION DESIGN OF DISTRIBUTED COMPLIANT MECHANISMS. Jixie Gongcheng Xuebao/Chinese Journal of Mechanical Engineering, 2006, 42, 27.	0.7	4
110	Design of Compliant Mechanisms of Distributed Compliance Using a Level-Set Based Topology Optimization Method. Applied Mechanics and Materials, 0, 110-116, 2319-2323.	0.2	1