Jan Zeman

List of Publications by Year
in descending order

		361413	315739
78 papers	1,713 citations	20 h-index	38 g-index
83 all docs	83 docs citations	83 times ranked	993 citing authors

#	Article	IF	Citations
1	Accelerating a FFT-based solver for numerical homogenization of periodic media by conjugate gradients. Journal of Computational Physics, 2010, 229, 8065-8071.	3.8	194
2	From random microstructures to representative volume elements. Modelling and Simulation in Materials Science and Engineering, 2007, 15, S325-S335.	2.0	111
3	An FFT-based Galerkin method for homogenization of periodic media. Computers and Mathematics With Applications, 2014, 68, 156-173.	2.7	109
4	Finite strain FFT-based non-linear solvers made simple. Computer Methods in Applied Mechanics and Engineering, 2017, 318, 412-430.	6.6	90
5	Numerical evaluation of effective elastic properties of graphite fiber tow impregnated by polymer matrix. Journal of the Mechanics and Physics of Solids, 2001, 49, 69-90.	4.8	89
6	A finite element perspective on nonlinear FFT-based micromechanical simulations. International Journal for Numerical Methods in Engineering, 2017, 111, 903-926.	2.8	79
7	Applying genetic algorithms to selected topics commonly encountered in engineering practice. Computer Methods in Applied Mechanics and Engineering, 2000, 190, 1629-1650.	6.6	54
8	Homogenization of balanced plain weave composites with imperfect microstructure: Part Iâ€"â€"Theoretical formulation. International Journal of Solids and Structures, 2004, 41, 6549-6571.	2.7	43
9	Micromechanical modeling of imperfect textile composites. International Journal of Engineering Science, 2008, 46, 513-526.	5.0	41
10	Mori-Tanaka Based Estimates of Effective Thermal Conductivity of Various Engineering Materials. Micromachines, 2011, 2, 129-149.	2.9	40
11	Complete damage in elastic and viscoelastic media and its energetics. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 1242-1253.	6.6	39
12	A comparative study on low-memory iterative solvers for FFT-based homogenization of periodic media. Journal of Computational Physics, 2016, 321, 151-168.	3.8	38
13	Guaranteed upperâ€"lower bounds on homogenized properties by FFT-based Galerkin method. Computer Methods in Applied Mechanics and Engineering, 2015, 297, 258-291.	6.6	36
14	Mesoscopic study on historic masonry. Structural Engineering and Mechanics, 2008, 30, 99-117.	1.0	35
15	A competitive comparison of different types of evolutionary algorithms. Computers and Structures, 2003, 81, 1979-1990.	4.4	31
16	Pragmatic multi-scale and multi-physics analysis of Charles Bridge in Prague. Engineering Structures, 2008, 30, 3365-3376.	5.3	29
17	Novel anisotropic continuumâ€"discrete damage model capable of representing localized failure of massive structures. Engineering Computations, 2009, 26, 128-144.	1.4	28
18	Stochastic Modeling of Chaotic Masonry via Mesostructural Characterization. International Journal for Multiscale Computational Engineering, 2009, 7, 171-185.	1.2	25

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19	Macroscopic Constitutive Law for Mastic Asphalt Mixtures from Multiscale Modeling. International Journal for Multiscale Computational Engineering, 2010, 8, 131-149.	1.2	25
20	An integrated experimental-numerical study of the performance of lime-based mortars in masonry piers under eccentric loading. Construction and Building Materials, 2016, 114, 913-924.	7.2	22
21	DELAMINATION AND ADHESIVE CONTACT MODELS AND THEIR MATHEMATICAL ANALYSIS AND NUMERICAL TREATMENT. Computational and Experimental Methods in Structures, 2013, , 349-400.	0.3	21
22	Qualitative analysis of fiber composite microstructure: Influence of boundary conditions. Probabilistic Engineering Mechanics, 2006, 21, 317-329.	2.7	19
23	Compressing random microstructures via stochastic Wang tilings. Physical Review E, 2012, 86, 040104.	2.1	19
24	Higherâ€order quasicontinuum methods for elastic and dissipative lattice models: uniaxial deformation and pure bending. GAMM Mitteilungen, 2015, 38, 344-368.	5.5	19
25	A variational formulation of dissipative quasicontinuum methods. International Journal of Solids and Structures, 2016, 102-103, 214-229.	2.7	18
26	Overall viscoelastic response of random fibrous composites with statistically quasi uniform distribution of reinforcements. Computer Methods in Applied Mechanics and Engineering, 2002, 191, 5027-5044.	6.6	17
27	Micromechanics-based simulations of compressive and tensile testing on lime-based mortars. Mechanics of Materials, 2017, 105, 49-60.	3.2	17
28	Aperiodic compression and reconstruction of real-world material systems based on Wang tiles. Physical Review E, 2014, 90, 062118.	2.1	16
29	Existence results for incompressible magnetoelasticity. Discrete and Continuous Dynamical Systems, 2015, 35, 2615-2623.	0.9	16
30	Subdifferentialâ€based implicit returnâ€mapping operators in computational plasticity. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2016, 96, 1318-1338.	1.6	16
31	Comparison of viscoelastic finite element models for laminated glass beams. International Journal of Mechanical Sciences, 2017, 131-132, 380-395.	6.7	16
32	On modal analysis of laminated glass: Usability of simplified methods and Enhanced Effective Thickness. Composites Part B: Engineering, 2018, 151, 92-105.	12.0	15
33	A micromechanics-enhanced finite element formulation for modelling heterogeneous materials. Computer Methods in Applied Mechanics and Engineering, 2012, 201-204, 53-64.	6.6	14
34	Analysis of coupled transport phenomena in concrete at elevated temperatures. Applied Mathematics and Computation, 2013, 219, 7262-7274.	2.2	14
35	Effective properties of textile composites: application of the Moriâ€"Tanaka method. Modelling and Simulation in Materials Science and Engineering, 2008, 16, 085002.	2.0	13
36	Some properties of strong solutions to nonlinear heat and moisture transport in multi-layer porous structures. Nonlinear Analysis: Real World Applications, 2012, 13, 1562-1580.	1.7	13

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37	An adaptive variational Quasicontinuum methodology for lattice networks with localized damage. International Journal for Numerical Methods in Engineering, 2017, 112, 174-200.	2.8	13
38	Wang tiling aided statistical determination of the Representative Volume Element size of random heterogeneous materials. European Journal of Mechanics, A/Solids, 2018, 70, 280-295.	3.7	13
39	A jigsaw puzzle metamaterial concept. Composite Structures, 2018, 202, 1275-1279.	5.8	13
40	Evaluation of Effective Thermal Conductivities of Porous Textile Composites. International Journal for Multiscale Computational Engineering, 2008, 6, 153-167.	1.2	13
41	A framework for integrated design of algorithmic architectural forms. Advances in Engineering Software, 2014, 72, 109-118.	3.8	12
42	Localization study of a regularized variational damage model. International Journal of Solids and Structures, 2015, 69-70, 131-151.	2.7	12
43	Nonlinear viscoelastic analysis of statistically homogeneous random composites. International Journal for Multiscale Computational Engineering, 2004, 2, 645-673.	1.2	12
44	Stochastic analysis of failure of earth structures. Probabilistic Engineering Mechanics, 2007, 22, 206-218.	2.7	11
45	HOMOGENIZATION OF PLAIN WEAVE COMPOSITES WITH IMPERFECT MICROSTRUCTURE. PART II. ANALYSIS OF REAL-WORLD MATERIALS. International Journal for Multiscale Computational Engineering, 2013, 11, 443-462.	1.2	10
46	Microstructural enrichment functions based on stochastic Wang tilings. Modelling and Simulation in Materials Science and Engineering, 2013, 21, 025014.	2.0	9
47	Numerical model of elastic laminated glass beams under finite strain. Archives of Civil and Mechanical Engineering, 2014, 14, 734-744.	3.8	9
48	A Micromechanics-Based Model for Stiffness and Strength Estimation of Cocciopesto Mortars. Acta Polytechnica, 2012, 52, .	0.6	9
49	Elimination of ringing artifacts by finite-element projection in FFT-based homogenization. Journal of Computational Physics, 2022, 453, 110931.	3.8	9
50	Modular-topology optimization of structures and mechanisms with free material design and clustering. Computer Methods in Applied Mechanics and Engineering, 2022, 395, 114977.	6.6	9
51	Localization analysis of variationally based gradient plasticity model. International Journal of Solids and Structures, 2013, 50, 256-269.	2.7	8
52	Localization analysis of an energy-based fourth-order gradient plasticity model. European Journal of Mechanics, A/Solids, 2016, 55, 256-277.	3.7	8
53	eXtended variational quasicontinuum methodology for lattice networks with damage and crack propagation. Computer Methods in Applied Mechanics and Engineering, 2017, 320, 769-792.	6.6	8
54	Reduced order models of elastic glass plate under low velocity impact. Computers and Structures, 2021, 244, 106430.	4.4	8

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55	Finite element model based on refined plate theories for laminated glass units. Latin American Journal of Solids and Structures, 2015, 12, 1158-1181.	1.0	7
56	Computational homogenization of fresh concrete flow around reinforcing bars. Computers and Structures, 2018, 207, 37-49.	4.4	7
57	Phase-Field Fracture Modelling of Thin Monolithic and Laminated Glass Plates under Quasi-Static Bending. Materials, 2020, 13, 5153.	2.9	7
58	Modular-topology optimization with Wang tilings: an application to truss structures. Structural and Multidisciplinary Optimization, 2021, 63, 1099-1117.	3.5	7
59	Analysis of a Fast Fourier Transform Based Method for Modeling of Heterogeneous Materials. Lecture Notes in Computer Science, 2012, , 515-522.	1.3	7
60	Reduced integration schemes in micromorphic computational homogenization of elastomeric mechanical metamaterials. Advanced Modeling and Simulation in Engineering Sciences, 2020, 7, .	1.7	7
61	Softening Gradient Plasticity: Analytical Study of Localization under Nonuniform Stress. International Journal for Multiscale Computational Engineering, 2010, 8, 37-60.	1.2	7
62	Guaranteed two-sided bounds on all eigenvalues of preconditioned diffusion and elasticity problems solved by the finite element method. , 2021, 66, 21-42.		7
63	Level-set Based Design of Wang Tiles for Modelling Complex Microstructures. CAD Computer Aided Design, 2020, 123, 102827.	2.7	6
64	Towards a Passive Self-Assembling Macroscale Multi-Robot System. IEEE Robotics and Automation Letters, 2021, 6, 7293-7300.	5.1	6
65	Microstructure-based modeling of elastic functionally graded materials: One-dimensional case. Journal of Mechanics of Materials and Structures, 2008, 3, 1773-1796.	0.6	6
66	Non-local energetics of random heterogeneous lattices. Journal of the Mechanics and Physics of Solids, 2011, 59, 1214-1230.	4.8	5
67	Designing modular 3D printed reinforcement of wound composite hollow beams with semidefinite programming. Materials and Design, 2019, 183, 108131.	7.0	5
68	Microstructure-informed reduced modes synthesized with Wang tiles and the Generalized Finite Element Method. Computational Mechanics, 2021, 68, 233-253.	4.0	5
69	Self-Stabilizing Self-Assembly. IEEE Robotics and Automation Letters, 2022, 7, 9763-9769.	5.1	5
70	Damage model for plastic materials at finite strains. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2019, 99, e201800032.	1.6	3
71	Global optimality in minimum compliance topology optimization of frames and shells by moment-sum-of-squares hierarchy. Structural and Multidisciplinary Optimization, 2021, 64, 1963.	3.5	2
72	ON OPTIMUM DESIGN OF FRAME STRUCTURES. Acta Polytechnica CTU Proceedings, 0, 26, 117-125.	0.3	2

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73	Finite element models for laminated glass units with viscoelastic interlayer for dynamic analysis. WIT Transactions on the Built Environment, 2016, , .	0.0	1
74	Guaranteed bounds on homogenized periodic media by FFT-based Galerkin method. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 563-564.	0.2	0
75	Block Conjugate Gradient Iteration for Fourier-Galerkin Homogenization of Periodic Media. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 463-464.	0.2	0
76	Minimum-Weight Truss Reinforcement of a Composite Beam to Increase the Free-Vibrations Fundamental Eigenfrequency. Key Engineering Materials, 0, 760, 219-224.	0.4	0
77	Reference material preconditioning for FFTâ€based solvers. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900283.	0.2	0
78	NEWMARK ALGORITHM FOR DYNAMIC ANALYSIS WITH MAXWELL CHAIN MODEL. Acta Polytechnica, 2020, 60, .	0.6	0