Stefan Kollmannsberger

List of Publications by Year
in descending order

79	2,172	218592	243529
papers	citations	26 h-index	44 g-index

83	83	83	1566
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Additive manufacturing in construction: A review on processes, applications, and digital planning methods. Additive Manufacturing, 2019, 30, 100894.	1.7	243
2	Geometric modeling, isogeometric analysis and the finite cell method. Computer Methods in Applied Mechanics and Engineering, 2012, 249-252, 104-115.	3.4	147
3	Biofabricated soft network composites for cartilage tissue engineering. Biofabrication, 2017, 9, 025014.	3.7	135
4	Smart octrees: Accurately integrating discontinuous functions in 3D. Computer Methods in Applied Mechanics and Engineering, 2016, 306, 406-426.	3.4	100
5	An Integrated Design, Material, and Fabrication Platform for Engineering Biomechanically and Biologically Functional Soft Tissues. ACS Applied Materials & Interfaces, 2017, 9, 29430-29437.	4.0	98
6	Multi-level hp-adaptivity: high-order mesh adaptivity without the difficulties of constraining hanging nodes. Computational Mechanics, 2015, 55, 499-517.	2.2	70
7	An efficient integration technique for the voxelâ€based finite cell method. International Journal for Numerical Methods in Engineering, 2012, 91, 457-471.	1.5	65
8	Efficient and accurate numerical quadrature for immersed boundary methods. Advanced Modeling and Simulation in Engineering Sciences, 2015, 2, .	0.7	63
9	Phase-field modeling of brittle fracture with multi-level hp-FEM and the finite cell method. Computational Mechanics, 2019, 63, 1283-1300.	2.2	63
10	Fixedâ€grid fluidâ€“structure interaction in two dimensions based on a partitioned Lattice Boltzmann and pâ€FEM approach. International Journal for Numerical Methods in Engineering, 2009, 79, 817-845.	1.5	60
11	Shell Finite Cell Method: A high order fictitious domain approach for thin-walled structures. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 3200-3209.	3.4	59
12	The Finite Cell Method for linear thermoelasticity. Computers and Mathematics With Applications, 2012, 64, 3527-3541.	1.4	55
13	The multi-level<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" display="inline" overflow="scroll"><mml:mi>h</mml:mi><mml:mi>p</mml:mi></mml:math>-method for three-dimensional problems: Dynamically changing high-order mesh refinement with arbitrary hanging nodes. Computer Methods in Applied Mechanics and Engineering, 2016, 310, 252-277.	3.4	50
14	Numerical integration of discontinuous functions: moment fitting and smart octree. Computational Mechanics, 2017, 60, 863-881.	2.2	49
15	Multi-level BÃ©zier extraction for hierarchical local refinement of Isogeometric Analysis. Computer Methods in Applied Mechanics and Engineering, 2018, 328, 147-174.	3.4	44
16	Bending behavior of octet-truss lattice structures: Modelling options, numerical characterization and experimental validation. Materials and Design, 2021, 205, 109693.	3.3	44
17	A hierarchical computational model for moving thermal loads and phase changes with applications to selective laser melting. Computers and Mathematics With Applications, 2018, 75, 1483-1497.	1.4	42
18	Non-standard bone simulation: interactive numerical analysis by computational steering. Computing and Visualization in Science, 2011, 14, 207-216.	1.2	39

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19	Robust and parallel scalable iterative solutions for large-scale finite cell analyses. Finite Elements in Analysis and Design, 2019, 163, 14-30.	1.7	37
20	Parameter-free, weak imposition of Dirichlet boundary conditions and coupling of trimmed and non-conforming patches. International Journal for Numerical Methods in Engineering, 2015, 101, 670-699.	1.5	36
21	A Selection of Benchmark Problems in Solid Mechanics and Applied Mathematics. Archives of Computational Methods in Engineering, 2021, 28, 713-751.	6.0	36
22	From geometric design to numerical analysis: A direct approach using the Finite Cell Method on Constructive Solid Geometry. Computers and Mathematics With Applications, 2017, 74, 1703-1726.	1.4	35
23	FCMLab: A finite cell research toolbox for MATLAB. Advances in Engineering Software, 2014, 74, 49-63.	1.8	34
24	Accurate Prediction of Melt Pool Shapes in Laser Powder Bed Fusion by the Non-Linear Temperature Equation Including Phase Changes. Integrating Materials and Manufacturing Innovation, 2019, 8, 167-177.	1.2	30
25	Multiâ€level hpâ€finite cell method for embedded interface problems with application in biomechanics. International Journal for Numerical Methods in Biomedical Engineering, 2018, 34, e2951.	1.0	28
26	An easy treatment of hanging nodes in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si0006.gif" overflow="scroll"><mml:mi mathvariant="italic">hp</mml:mi></mml:math>-finite elements. Finite Elements in Analysis and Design, 2016, 121, 101-117.	1.7	27
27	Image-based numerical characterization and experimental validation of tensile behavior of octet-truss lattice structures. Additive Manufacturing, 2021, 41, 101949.	1.7	27
28	Integrating CAD and numerical analysis: â€˜Dirty geometryâ€™ handling using the Finite Cell Method. Computer Methods in Applied Mechanics and Engineering, 2019, 351, 808-835.	3.4	25
29	Image-based material characterization of complex microarchitectured additively manufactured structures. Computers and Mathematics With Applications, 2020, 80, 2462-2480.	1.4	25
30	Hierarchically refined isogeometric analysis of trimmed shells. Computational Mechanics, 2020, 66, 431-447.	2.2	23
31	The finite cell method for geometrically nonlinear problems of solid mechanics. IOP Conference Series: Materials Science and Engineering, 2010, 10, 012170.	0.3	21
32	Finite Cell Method: High-Order Structural Dynamics for Complex Geometries. International Journal of Structural Stability and Dynamics, 2015, 15, 1540018.	1.5	21
33	Numerical Evaluation of Advanced Laser Control Strategies Influence on Residual Stresses for Laser Powder Bed Fusion Systems. Integrating Materials and Manufacturing Innovation, 2020, 9, 435-445.	1.2	20
34	Uncertainty quantification of microstructure variability and mechanical behavior of additively manufactured lattice structures. Computer Methods in Applied Mechanics and Engineering, 2021, 385, 114049.	3.4	19
35	Direct structural analysis of domains defined by point clouds. Computer Methods in Applied Mechanics and Engineering, 2020, 358, 112581.	3.4	18
36	Normal contact with high order finite elements and a fictitious contact material. Computers and Mathematics With Applications, 2015, 70, 1370-1390.	1.4	17

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37	Multiâ€level hpâ€adaptivity for cohesive fracture modeling. International Journal for Numerical Methods in Engineering, 2017, 109, 1723-1755.	1.5	17
38	Modeling and experimental validation of an immersed thermo-mechanical part-scale analysis for laser powder bed fusion processes. Additive Manufacturing, 2020, 36, 101498.	1.7	17
39	A 3D benchmark problem for crack propagation in brittle fracture. Computer Methods in Applied Mechanics and Engineering, 2020, 364, 112905.	3.4	16
40	Point cloud-based elastic reverse time migration for ultrasonic imaging of components with vertical surfaces. Mechanical Systems and Signal Processing, 2022, 163, 108144.	4.4	16
41	Parallelization of the multi-level <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si13.gif" display="inline" overflow="scroll"><mml:mi>h</mml:mi><mml:mi>p</mml:mi></mml:math>-adaptive finite cell method. Computers and Mathematics With Applications, 2017, 74, 126-142.	1.4	14
42	A high-order finite element model for vibration analysis of cross-laminated timber assemblies. Building Acoustics, 2017, 24, 135-158.	1.1	13
43	On the natural stabilization of convection dominated problems using high order Bubnovâ€“Galerkin finite elements. Computers and Mathematics With Applications, 2014, 66, 2545-2558.	1.4	12
44	Weak imposition of frictionless contact constraints on automatically recovered high-order, embedded interfaces using the finite cell method. Computational Mechanics, 2018, 61, 385-407.	2.2	12
45	Residual stresses in metal deposition modeling: Discretizations of higher order. Computers and Mathematics With Applications, 2019, 78, 2247-2266.	1.4	12
46	An immersed boundary approach for residual stress evaluation in selective laser melting processes. Additive Manufacturing, 2021, 46, 102077.	1.7	11
47	TUM.GeoFrame: automated high-order hexahedral mesh generation for shell-like structures. Engineering With Computers, 2014, 30, 41-56.	3.5	10
48	Multi-level hp-adaptivity and explicit error estimation. Advanced Modeling and Simulation in Engineering Sciences, 2016, 3, .	0.7	10
49	The finite cell method with least squares stabilized Nitsche boundary conditions. Computer Methods in Applied Mechanics and Engineering, 2022, 393, 114792.	3.4	10
50	A three-field phase-field model for mixed-mode fracture in rock based on experimental determination of the mode II fracture toughness. Engineering With Computers, 2022, 38, 5563-5581.	3.5	10
51	Thermal Optimization of Additively Manufactured Lightweight Concrete Wall Elements with Internal Cellular Structure through Simulations and Measurements. Buildings, 2022, 12, 1023.	1.4	9
52	Splineâ€•and hp â€basis functions of higher differentiability in the finite cell method. GAMM Mitteilungen, 2020, 43, e202000004.	2.7	8
53	Physics-Informed Neural Networks. Studies in Computational Intelligence, 2021, , 55-84.	0.7	8
54	Thin Solids for Fluid-Structure Interaction. , 2006, , 294-335.		7

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55	Image-based mesh generation of tubular geometries under circular motion in refractive environments. Machine Vision and Applications, 2018, 29, 719-733.	1.7	6
56	A posteriori error control for the finite cell method. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900419.	0.2	5
57	Finite cell method for functionally graded materials based on V-models and homogenized microstructures. Advanced Modeling and Simulation in Engineering Sciences, 2020, 7, .	0.7	5
58	On accurate time integration for temperature evolutions in additive manufacturing. GAMM Mitteilungen, 2021, 44, e202100019.	2.7	5
59	An accurate strategy for computing reaction forces and fluxes on trimmed locally refined meshes. Journal of Mechanics, 2022, 38, 60-76.	0.7	5
60	Hierarchical multigrid approaches for the finite cell method on uniform and multi-level <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" id="d1e3445" altimg="si85.svg"><mml:mrow><mml:mi>h</mml:mi><mml:mi>p</mml:mi></mml:mrow></mml:math>-refined grids. Computer Methods in Applied Mechanics and Engineering, 2021, 386, 114075.	3.4	4
61	A new mortar formulation for modeling elastomer bedded structures with modal-analysis in 3D. Advanced Modeling and Simulation in Engineering Sciences, 2014, 1, .	0.7	3
62	An Explicit Model for Three-Dimensional Fluid-Structure Interaction using LBM and p-FEM. Lecture Notes in Computational Science and Engineering, 2011, , 285-325.	0.1	3
63	BIM gestÃ¼tzte strukturdynamische Analyse mit Volumenelementen hÃ¶herer Ordnung/BIM-based structural dynamic analysis using higher-order volumetric finite elements. Bauingenieur, 2018, 93, 160-166.	0.1	3
64	A high-order enrichment strategy for the finite cell method. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 207-208.	0.2	2
65	A mortar formulation including viscoelastic layers for vibration analysis. Computational Mechanics, 2019, 63, 23-33.	2.2	2
66	Numerical evaluation of high cycle fatigue life for additively manufactured stainless steel 316L lattice structures: Preliminary considerations. Material Design and Processing Communications, 2021, 3, e249.	0.5	2
67	Multiscale Analysis of High Damping Composites Using the Finite Cell and the Mortar Method. International Journal of Structural Stability and Dynamics, 2021, 21, .	1.5	2
68	FSI Based on Bidirectional Coupling of High Order Solids to a Lattice-Boltzmann Method. , 2006, , 419.		1
69	Simulation for additive manufacturing. Computers and Mathematics With Applications, 2019, 78, 2167.	1.4	1
70	Deep Energy Method. Studies in Computational Intelligence, 2021, , 85-91.	0.7	1
71	Fundamental Concepts of Machine Learning. Studies in Computational Intelligence, 2021, , 5-18.	0.7	1
72	Force Transfer for High Order Finite Element Methods Using Intersected Meshes. , 2007, , .		1

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73	A DESIGN-THROUGH-ANALYSIS APPROACH USING THE FINITE CELL METHOD. , 2016, , .		1
74	Enforcing essential boundary conditions on domains defined by point clouds. Computers and Mathematics With Applications, 2022, 113, 13-23.	1.4	1
75	An Immersed Boundary Approach for the Numerical Analysis of Objects Represented by Oriented Point Clouds. Lecture Notes in Computer Science, 2019, , 33-41.	1.0	0
76	Machine Learning in Physics and Engineering. Studies in Computational Intelligence, 2021, , 47-54.	0.7	0
77	Direct Numerical Analysis of Historical Structures Represented by Point Clouds. Lecture Notes in Computer Science, 2018, , 64-75.	1.0	0
78	Modelling Fluid-Structure Interaction with High Order Solids and Lattice Boltzmann. , 0, , .		0
79	The Lattice Boltzmann Method for Fluid-Structure Interaction Phenomena. , 0, , .		0