Lei Zhang

List of Publications by Year
in descending order

33 papers	847 citations	623734 14 h-index	477307 29 g-index
33 all docs	33 docs citations	33 times ranked	403 citing authors

#	Article	IF	Citations
1	Elastic anisotropy in the reduced Landauâ€“de Gennes model. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2022, 478, .	2.1	3
2	On the Multiscale Landauâ€“Lifshitzâ€“Gilbert Equation: Two-Scale Convergence and Stability Analysis. Multiscale Modeling and Simulation, 2022, 20, 835-856.	1.6	0
3	A priori analysis of a higher-order nonlinear elasticity model for an atomistic chain with periodic boundary condition. IMA Journal of Numerical Analysis, 2021, 41, 1465-1495.	2.9	1
4	A Posteriori Error Estimates for Adaptive QM/MM Coupling Methods. SIAM Journal of Scientific Computing, 2021, 43, A2785-A2808.	2.8	4
5	Iterated Numerical Homogenization for MultiScale Elliptic Equations with Monotone Nonlinearity. Multiscale Modeling and Simulation, 2021, 19, 1601-1632.	1.6	1
6	A Reduced Study for Nematic Equilibria on Two-Dimensional Polygons. SIAM Journal on Applied Mathematics, 2020, 80, 1678-1703.	1.8	15
7	Surface anchoring controls orientation of a microswimmer in nematic liquid crystal. Communications Physics, 2020, 3, .	5.3	14
8	True stress-strain curve extraction from ion-irradiated materials via small tensile, small punch and nanoindentation tests: method development and accuracy/consistency verification. Nuclear Fusion, 2020, 60, 056012.	3.5	10
9	Surface, size and topological effects for some nematic equilibria on rectangular domains. Mathematics and Mechanics of Solids, 2020, 25, 1101-1123.	2.4	10
10	A Posteriori Error Estimate and Adaptive Mesh Refinement Algorithm for Atomistic/Continuum Coupling with Finite Range Interactions in Two Dimensions. Communications in Computational Physics, 2020, 27, 198-226.	1.7	2
11	Energy minimization and preconditioning in the simulation of athermal granular materials in two dimensions. Electronic Research Archive, 2020, 28, 405-421.	0.9	0
12	Optimizing parallel section length for small tensile specimen with fabrication non-uniformity in thickness. Fusion Engineering and Design, 2019, 147, 111244.	1.9	6
13	Fast Eigenpairs Computation with Operator Adapted Wavelets and Hierarchical Subspace Correction. SIAM Journal on Numerical Analysis, 2019, 57, 2519-2550.	2.3	12
14	Adaptive QM/MM coupling for crystalline defects. Computer Methods in Applied Mechanics and Engineering, 2019, 354, 351-368.	6.6	8
15	A Posteriori Error Estimation and Adaptive Algorithm for Atomistic/Continuum Coupling in Two Dimensions. SIAM Journal of Scientific Computing, 2018, 40, A2087-A2119.	2.8	5
16	Gamblets for opening the complexity-bottleneck of implicit schemes for hyperbolic and parabolic ODEs/PDEs with rough coefficients. Journal of Computational Physics, 2017, 347, 99-128.	3.8	63
17	A comprehensive solution to miniaturized tensile testing: Specimen geometry optimization and extraction of constitutive behaviors using inverse FEM procedure. Fusion Engineering and Design, 2017, 121, 188-197.	1.9	31
18	Experimental studies of vibrational modes in a two-dimensional amorphous solid. Nature Communications, 2017, 8, 67.	12.8	33

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19	Atomistic/Continuum Blending with Ghost Force Correction. SIAM Journal of Scientific Computing, 2016, 38, A346-A375.	2.8	12
20	Grain Size Dependence of Uniform Elongation in Single-Phase FCC/BCC Metals. Journal of Materials Engineering and Performance, 2016, 25, 3599-3605.	2.5	22
21	On an evolution equation in a cell motility model. Physica D: Nonlinear Phenomena, 2016, 318-319, 12-25.	2.8	11
22	Competing effects of interface anisotropy and isotropic driving force on the growth of steady-state shape in phase-field modeling. Computational Materials Science, 2016, 111, 313-321.	3.0	2
23	Two-level additive Schwarz methods using rough polyharmonic splines-based coarse spaces. Chinese Annals of Mathematics Series B, 2015, 36, 803-812.	0.4	0
24	(In-)stability and Stabilization of QNL-Type Atomistic-to-Continuum Coupling Methods. Multiscale Modeling and Simulation, 2014, 12, 1258-1293.	1.6	5
25	Polyharmonic homogenization, rough polyharmonic splines and sparse super-localization. ESAIM: Mathematical Modelling and Numerical Analysis, 2014, 48, 517-552.	1.9	118
26	Energy-based atomistic-to-continuum coupling without ghost forces. Computer Methods in Applied Mechanics and Engineering, 2014, 279, 29-45.	6.6	19
27	Construction and Sharp Consistency Estimates for Atomistic/Continuum Coupling Methods with General Interfaces: A Two-Dimensional Model Problem. SIAM Journal on Numerical Analysis, 2012, 50, 2940-2965.	2.3	31
28	Localized Bases for Finite-Dimensional Homogenization Approximations with Nonseparated Scales and High Contrast. Multiscale Modeling and Simulation, 2011, 9, 1373-1398.	1.6	91
29	Global Energy Matching Method for Atomistic-to-Continuum Modeling of Self-Assembling Biopolymer Aggregates. Multiscale Modeling and Simulation, 2010, 8, 1958-1980.	1.6	4
30	Multiscale finite element algorithm of the eigenvalue problems for the elastic equations in composite materials. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 2539-2554.	6.6	16
31	Numerical homogenization of the acoustic wave equations with a continuum of scales. Computer Methods in Applied Mechanics and Engineering, 2008, 198, 397-406.	6.6	83
32	Homogenization of Parabolic Equations with a Continuum of Space and Time Scales. SIAM Journal on Numerical Analysis, 2008, 46, 1-36.	2.3	59
33	Metric-based upscaling. Communications on Pure and Applied Mathematics, 2007, 60, 675-723.	3.1	156