

Elena Cherkaev

List of Publications by Year in descending order

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47
papers

855
citations

516710

16
h-index

501196

28
g-index

48
all docs

48
docs citations

48
times ranked

608
citing authors

#	ARTICLE	IF	CITATIONS
1	Non-smooth gravity problem with total variation penalization functional. Geophysical Journal International, 2002, 149, 499-507.	2.4	90
2	Transition waves in bistable structures. II. Analytical solution: wave speed and energy dissipation. Journal of the Mechanics and Physics of Solids, 2005, 53, 407-436.	4.8	80
3	Inverse homogenization for evaluation of effective properties of a mixture. Inverse Problems, 2001, 17, 1203-1218.	2.0	72
4	3-D magnetotelluric inversion including topography using deformed hexahedral edge finite elements and direct solvers parallelized on SMP computers – Part I: forward problem and parameter Jacobians. Geophysical Journal International, 2016, 204, 74-93.	2.4	65
5	Transition waves in bistable structures. I. Delocalization of damage. Journal of the Mechanics and Physics of Solids, 2005, 53, 383-405.	4.8	57
6	Minimax optimization problem of structural design. Computers and Structures, 2008, 86, 1426-1435.	4.4	50
7	3-dimensional magnetotelluric inversion including topography using deformed hexahedral edge finite elements and direct solvers parallelized on symmetric multiprocessor computers – Part II: direct data-space inverse solution. Geophysical Journal International, 2016, 204, 94-110.	2.4	46
8	Principal Compliance and Robust Optimal Design. Journal of Elasticity, 2003, 72, 71-98.	1.9	37
9	Reconstruction of spectral function from effective permittivity of a composite material using rational function approximations. Journal of Computational Physics, 2009, 228, 5390-5409.	3.8	30
10	On the Definition of Marginal Ice Zone Width. Journal of Atmospheric and Oceanic Technology, 2017, 34, 1565-1584.	1.3	24
11	Dehomogenization: reconstruction of moments of the spectral measure of the composite. Inverse Problems, 2008, 24, 065008.	2.0	21
12	Padé approximations for identification of air bubble volume from temperature- or frequency-dependent permittivity of a two-component mixture. Inverse Problems in Science and Engineering, 2008, 16, 425-445.	1.2	21
13	Stieltjes representation of the 3D Bruggeman effective medium and Padé approximation. Applied Mathematics and Computation, 2011, 217, 7092-7107.	2.2	20
14	Coupling of the effective properties of a random mixture through the reconstructed spectral representation. Physica B: Condensed Matter, 2003, 338, 16-23.	2.7	19
15	Effective medium approximations for anisotropic composites with arbitrary component orientation. Journal of Applied Physics, 2013, 114, 164102.	2.5	19
16	Analytical relations between effective material properties and microporosity: Application to bone mechanics. International Journal of Engineering Science, 2008, 46, 1239-1252.	5.0	16
17	Mathematical Modeling: A Tool for Optimization of Lipid Nanoparticle-Mediated Delivery of siRNA. Molecular Therapy - Nucleic Acids, 2017, 7, 246-255.	5.1	15
18	Two-scale cut-and-project convergence; homogenization of quasiperiodic structures. Mathematical Methods in the Applied Sciences, 2018, 41, 1101-1106.	2.3	14

#	ARTICLE	IF	CITATIONS
19	Spectral analysis and connectivity of porous microstructures in bone. <i>Journal of Biomechanics</i> , 2011, 44, 337-344.	2.1	13
20	Modeling Sea Ice. <i>Notices of the American Mathematical Society</i> , 2020, 67, 1.	0.2	13
21	Spectral measure computations for composite materials. <i>Communications in Mathematical Sciences</i> , 2015, 13, 825-862.	1.0	12
22	On the integral representation formula for a two-component elastic composite. <i>Mathematical Methods in the Applied Sciences</i> , 2006, 29, 655-664.	2.3	10
23	Rational approximation for estimation of quality Q factor and phase velocity in linear, viscoelastic, isotropic media. <i>Computational Geosciences</i> , 2011, 15, 117-133.	2.4	10
24	Cross-borehole delineation of a conductive ore deposit in a resistive host – experimental design. <i>Geophysics</i> , 2001, 66, 824-835.	2.6	9
25	Analytical Approach to Recovering Bone Porosity From Effective Complex Shear Modulus. <i>Journal of Biomechanical Engineering</i> , 2009, 131, 121003.	1.3	9
26	Characterization of structure and properties of bone by spectral measure method. <i>Journal of Biomechanics</i> , 2011, 44, 345-351.	2.1	9
27	Anderson Transition for Classical Transport in Composite Materials. <i>Physical Review Letters</i> , 2017, 118, 036401.	7.8	9
28	Modeling the Kinetics of Lipid-Nanoparticle- Mediated Delivery of Multiple siRNAs to Evaluate the Effect on Competition for Ago2. <i>Molecular Therapy - Nucleic Acids</i> , 2019, 16, 367-377.	5.1	9
29	Recovery of inclusion separations in strongly heterogeneous composites from effective property measurements. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2012, 468, 784-809.	2.1	8
30	Wave-Driven Assembly of Quasiperiodic Patterns of Particles. <i>Physical Review Letters</i> , 2021, 126, 145501.	7.8	7
31	Principal Compliance and Robust Optimal Design. , 2004, , 169-196.		7
32	Null space correction and adaptive model order reduction in multi-frequency Maxwell’s problem. <i>Advances in Computational Mathematics</i> , 2017, 43, 171-193.	1.6	6
33	IDENTIFICATION OF BONE MICROSTRUCTURE FROM EFFECTIVE COMPLEX MODULUS. , 2006, , 91-96.		6
34	Spectral Coupling of Effective Properties of a Random Mixture. , 2003, , 331-340.		4
35	Spectral analysis and computation of effective diffusivities in space-time periodic incompressible flows. <i>Annals of Mathematical Sciences and Applications</i> , 2017, 2, 3-66.	0.4	4
36	Geometric series expansion of the Neumann–Poincaré operator: Application to composite materials. <i>European Journal of Applied Mathematics</i> , 2022, 33, 560-585.	2.9	3

#	ARTICLE	IF	CITATIONS
37	Order to disorder in quasiperiodic composites. Communications Physics, 2022, 5, .	5.3	3
38	Inverse homogenization with diagonal Padé approximants. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1042001-1042002.	0.2	2
39	Internal friction and the Stieltjes analytic representation of the effective properties of two-dimensional viscoelastic composites. Archive of Applied Mechanics, 2019, 89, 591-607.	2.2	2
40	DYNAMICS OF STRUCTURES WITH BISTABLE LINKS. , 2006, , 111-122.		2
41	Principles of Optimization of Structures Against an Impact. Journal of Physics: Conference Series, 2011, 319, 012021.	0.4	1
42	Internal resonances and relaxation memory kernels in composites. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190106.	3.4	1
43	Padé approximations in inverse homogenization and numerical simulation of electromagnetic fields in composites. , 2010, , .		0
44	An isoperimetric inequality for an integral operator on flat tori. Illinois Journal of Mathematics, 2015, 59, .	0.1	0
45	Forward and inverse homogenization of the electromagnetic properties of a quasiperiodic composite. , 2019, , .		0
46	Optimal design for the worst case scenario. , 2006, , 380-380.		0
47	Identification of bone structure from effective measurements. , 2006, , 551-551.		0