

# Arash Yavari

## List of Publications by Year in descending order

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91  
papers

2,214  
citations

236833

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254106

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docs citations

92  
times ranked

1040  
citing authors

#	ARTICLE	IF	CITATIONS
1	The universal program of linear elasticity. <i>Mathematics and Mechanics of Solids</i> , 2023, 28, 251-268.	1.5	3
2	Universality in Anisotropic Linear Anelasticity. <i>Journal of Elasticity</i> , 2022, 150, 241-259.	0.9	3
3	The mathematical foundations of anelasticity: existence of smooth global intermediate configurations. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2021, 477, 20200462.	1.0	16
4	Transformation Cloaking in Elastic Plates. <i>Journal of Nonlinear Science</i> , 2021, 31, 1.	1.0	7
5	Recent advances in the applications of geometry in solid mechanics. <i>Mechanics Research Communications</i> , 2021, 111, 103656.	1.0	0
6	On Eshelby's inclusion problem in nonlinear anisotropic elasticity. <i>Journal of Micromechanics and Molecular Physics</i> , 2021, 06, 2150002.	0.7	7
7	On Nye's lattice curvature tensor. <i>Mechanics Research Communications</i> , 2021, 113, 103696.	1.0	4
8	Elastodynamic transformation cloaking for non-centrosymmetric gradient solids. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2021, 72, 1.	0.7	5
9	On Hashin's Hollow Cylinder and Sphere Assemblages in Anisotropic Nonlinear Elasticity. <i>Journal of Elasticity</i> , 2021, 146, 65-82.	0.9	5
10	Universal deformations in inhomogeneous isotropic nonlinear elastic solids. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2021, 477, .	1.0	8
11	Universal deformations in anisotropic nonlinear elastic solids. <i>Journal of the Mechanics and Physics of Solids</i> , 2021, 156, 104598.	2.3	14
12	Universal displacements in linear elasticity. <i>Journal of the Mechanics and Physics of Solids</i> , 2020, 135, 103782.	2.3	12
13	The Anelastic Ericksen Problem: Universal Deformations and Universal Eigenstrains in Incompressible Nonlinear Anelasticity. <i>Journal of Elasticity</i> , 2020, 142, 291-381.	0.9	15
14	Nonlinear mechanics of thermoelastic accretion. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2020, 71, 1.	0.7	7
15	Riemannian and Euclidean material structures in anelasticity. <i>Mathematics and Mechanics of Solids</i> , 2020, 25, 1267-1293.	1.5	10
16	Applications of Algebraic Topology in Elasticity. <i>Advances in Mechanics and Mathematics</i> , 2020, , 143-183.	0.2	3
17	Compatible-strain mixed finite element methods for 3D compressible and incompressible nonlinear elasticity. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2019, 357, 112610.	3.4	11
18	Nonlinear and Linear Elastodynamic Transformation Cloaking. <i>Archive for Rational Mechanics and Analysis</i> , 2019, 234, 211-316.	1.1	15

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19	Nonlinear mechanics of accretion. <i>Journal of Nonlinear Science</i> , 2019, 29, 1813-1863.	1.0	27
20	Compatible-strain mixed finite element methods for incompressible nonlinear elasticity. <i>Journal of Computational Physics</i> , 2018, 361, 247-279.	1.9	18
21	Nonlinear Elastic Inclusions in Anisotropic Solids. <i>Journal of Elasticity</i> , 2018, 130, 239-269.	0.9	23
22	Line and point defects in nonlinear anisotropic solids. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2018, 69, 1.	0.7	13
23	Geometric nonlinear thermoelasticity and the time evolution of thermal stresses. <i>Mathematics and Mechanics of Solids</i> , 2017, 22, 1546-1587.	1.5	22
24	On the Stress Field of a Nonlinear Elastic Solid Torus with a Toroidal Inclusion. <i>Journal of Elasticity</i> , 2017, 128, 115-145.	0.9	16
25	Compatible-strain mixed finite element methods for 2D compressible nonlinear elasticity. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2017, 313, 596-631.	3.4	24
26	Nonlinear mechanics of surface growth for cylindrical and spherical elastic bodies. <i>Journal of the Mechanics and Physics of Solids</i> , 2017, 98, 12-48.	2.3	40
27	The anelastic Ericksen problem: universal eigenstrains and deformations in compressible isotropic elastic solids. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2016, 472, 20160690.	1.0	13
28	Small-on-large geometric anelasticity. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2016, 472, 20160659.	1.0	6
29	A Geometric Theory of Nonlinear Morphoelastic Shells. <i>Journal of Nonlinear Science</i> , 2016, 26, 929-978.	1.0	24
30	Nonlinear Elasticity in a Deforming Ambient Space. <i>Journal of Nonlinear Science</i> , 2016, 26, 1651-1692.	1.0	22
31	Hilbert complexes of nonlinear elasticity. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2016, 67, 1.	0.7	8
32	Circumferentially-symmetric finite eigenstrains in incompressible isotropic nonlinear elastic wedges. <i>International Journal of Non-Linear Mechanics</i> , 2016, 84, 116-129.	1.4	23
33	The weak compatibility equations of nonlinear elasticity and the insufficiency of the Hadamard jump condition for non-simply connected bodies. <i>Continuum Mechanics and Thermodynamics</i> , 2016, 28, 1347-1359.	1.4	4
34	On the wedge dispiration in an inhomogeneous isotropic nonlinear elastic solid. <i>Mechanics Research Communications</i> , 2016, 78, 55-59.	1.0	6
35	The twist-fit problem: finite torsional and shear eigenstrains in nonlinear elastic solids. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2015, 471, 20150596.	1.0	19
36	On the stress singularities generated by anisotropic eigenstrains and the hydrostatic stress due to annular inhomogeneities. <i>Journal of the Mechanics and Physics of Solids</i> , 2015, 76, 325-337.	2.3	14

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37	Differential Complexes in Continuum Mechanics. Archive for Rational Mechanics and Analysis, 2015, 216, 193-220.	1.1	20
38	Non-metricity and the Nonlinear Mechanics of Distributed Point Defects. Springer Proceedings in Mathematics and Statistics, 2015, , 235-251.	0.1	2
39	On the compatibility equations of nonlinear and linear elasticity in the presence of boundary conditions. Zeitschrift Fur Angewandte Mathematik Und Physik, 2015, 66, 3627-3644.	0.7	5
40	Affine development of closed curves in Weitzenböck manifolds and the Burgers vector of dislocation mechanics. Mathematics and Mechanics of Solids, 2014, 19, 299-307.	1.5	9
41	Structural transformations in NiTi shape memory alloy nanowires. Journal of Applied Physics, 2014, 115, .	1.1	54
42	The geometry of discombinations and its applications to semi-inverse problems in anelasticity. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2014, 470, 20140403.	1.0	25
43	Compatibility Equations of Nonlinear Elasticity for Non-Simply-Connected Bodies. Archive for Rational Mechanics and Analysis, 2013, 209, 237-253.	1.1	46
44	Nonlinear elastic inclusions in isotropic solids. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20130415.	1.0	40
45	A geometric structure-preserving discretization scheme for incompressible linearized elasticity. Computer Methods in Applied Mechanics and Engineering, 2013, 259, 130-153.	3.4	9
46	On superelastic bending of shape memory alloy beams. International Journal of Solids and Structures, 2013, 50, 1664-1680.	1.3	60
47	Riemann-Cartan geometry of nonlinear disclination mechanics. Mathematics and Mechanics of Solids, 2013, 18, 91-102.	1.5	58
48	A micromechanical analysis of the coupled thermomechanical superelastic response of textured and untextured polycrystalline NiTi shape memory alloys. Acta Materialia, 2013, 61, 4542-4558.	3.8	33
49	Atomic Structure of 180° Ferroelectric Domain Walls in PbTiO <sub>3</sub> . , 2013, , .		0
50	Weyl geometry and the nonlinear mechanics of distributed point defects. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 3902-3922.	1.0	54
51	Covariantization of nonlinear elasticity. Zeitschrift Fur Angewandte Mathematik Und Physik, 2012, 63, 921-927.	0.7	8
52	A closed-form solution for superelastic shape memory alloy beams subjected to bending. Proceedings of SPIE, 2012, , .	0.8	1
53	Riemann-Cartan Geometry of Nonlinear Dislocation Mechanics. Archive for Rational Mechanics and Analysis, 2012, 205, 59-118.	1.1	127
54	Coupled thermo-mechanical analysis of shape memory alloy circular bars in pure torsion. International Journal of Non-Linear Mechanics, 2012, 47, 118-128.	1.4	23

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55	Influence of material ductility and crack surface roughness on fracture instability. Journal Physics D: Applied Physics, 2011, 44, 395302.	1.3	17
56	A Simplified Constitutive Model for Simulating the Rate-Dependent Superelastic Shape Memory Alloys in Fast Loadings. , 2011, , .		0
57	A semi-analytic analysis of shape memory alloy thick-walled cylinders under internal pressure. Archive of Applied Mechanics, 2011, 81, 1093-1116.	1.2	26
58	Analysis of the rate-dependent coupled thermo-mechanical response of shape memory alloy bars and wires in tension. Continuum Mechanics and Thermodynamics, 2011, 23, 363-385.	1.4	44
59	A combined analytical, numerical, and experimental study of shape-memory-alloy helical springs. International Journal of Solids and Structures, 2011, 48, 611-624.	1.3	97
60	Convergence analysis of the Wolf method for Coulombic interactions. Physics Letters, Section A: General, Atomic and Solid State Physics, 2011, 375, 1281-1285.	0.9	9
61	Effect of external normal and parallel electric fields on 180° ferroelectric domain walls in PbTiO <sub>3</sub> . Journal of Physics Condensed Matter, 2011, 23, 035901.	0.7	3
62	Is the Stress Distribution Uniform in the Cross Section of SMA Bars Subjected to Uniaxial Loading? Is it Related to Rate Dependency?. , 2011, , .		0
63	Exact Solution for Pure Torsion of SMA Curved Bars With Application to Analyzing SMA Helical Springs. , 2011, , .		0
64	A Geometric Theory of Growth Mechanics. Journal of Nonlinear Science, 2010, 20, 781-830.	1.0	112
65	Exact solutions for pure torsion of shape memory alloy circular bars. Mechanics of Materials, 2010, 42, 797-806.	1.7	56
66	Estimating terminal velocity of rough cracks in the framework of discrete fractal fracture mechanics. Engineering Fracture Mechanics, 2010, 77, 1516-1526.	2.0	22
67	Structure of defective crystals at finite temperatures: A quasi-harmonic lattice dynamics approach. International Journal of Solids and Structures, 2010, 47, 1807-1821.	1.3	5
68	A geometric theory of thermal stresses. Journal of Mathematical Physics, 2010, 51, .	0.5	63
69	Atomic structure of steps on 180° ferroelectric domain walls in PbTiO <sub>3</sub> . Journal of Applied Physics, 2010, 108, .	1.1	8
70	Effect of strain and oxygen vacancies on the structure of 180° ferroelectric domain walls in PbTiO <sub>3</sub> . Computational Materials Science, 2010, 48, 258-266.	1.4	11
71	Energy balance invariance for interacting particle systems. Zeitschrift Fur Angewandte Mathematik Und Physik, 2009, 60, 723-738.	0.7	9
72	A discrete cohesive model for fractal cracks. Engineering Fracture Mechanics, 2009, 76, 548-559.	2.0	23

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73	Anharmonic analysis of defective crystals with many-body interactions using symmetry reduction. Computational Materials Science, 2009, 44, 1296-1306.	1.4	6
74	Covariant balance laws in continua with microstructure. Reports on Mathematical Physics, 2009, 63, 1-42.	0.4	18
75	Finite Fracture Mechanics for Fractal Cracks. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2009, , 223-231.	0.1	1
76	Covariance in linearized elasticity. Zeitschrift Fur Angewandte Mathematik Und Physik, 2008, 59, 1081-1110.	0.7	25
77	Discrete fractal fracture mechanics. Engineering Fracture Mechanics, 2008, 75, 1127-1142.	2.0	39
78	On geometric discretization of elasticity. Journal of Mathematical Physics, 2008, 49, .	0.5	52
79	Response to A. Carpinteri, B. Chiaia, P. Cornetti and S. Puzzi's Comments on "Is the cause of size effect on structural strength fractal or energetic-statistical?" Engineering Fracture Mechanics, 2007, 74, 2897-2910.	2.0	15
80	On the geometric character of stress in continuum mechanics. Zeitschrift Fur Angewandte Mathematik Und Physik, 2007, 58, 843-856.	0.7	52
81	On spatial and material covariant balance laws in elasticity. Journal of Mathematical Physics, 2006, 47, 042903.	0.5	72
82	A Theory of Anharmonic Lattice Statics for Analysis of Defective Crystals. Journal of Elasticity, 2006, 86, 41-83.	0.9	23
83	A correspondence principle for fractal and classical cracks. Engineering Fracture Mechanics, 2005, 72, 2744-2757.	2.0	34
84	Is the cause of size effect on structural strength fractal or energetic-statistical?. Engineering Fracture Mechanics, 2005, 72, 1-31.	2.0	123
85	On estimating stress intensity factors and modulus of cohesion for fractal cracks. Engineering Fracture Mechanics, 2003, 70, 1659-1674.	2.0	41
86	GENERALIZATION OF BARENBLATT'S COHESIVE FRACTURE THEORY FOR FRACTAL CRACKS. Fractals, 2002, 10, 189-198.	1.8	25
87	The mechanics of self-similar and self-affine fractal cracks. International Journal of Fracture, 2002, 114, 1-27.	1.1	50
88	Topological aspects of meshless methods and nodal ordering for meshless discretizations. International Journal for Numerical Methods in Engineering, 2001, 52, 921-938.	1.5	6
89	The fourth mode of fracture in fractal fracture mechanics. International Journal of Fracture, 2000, 101, 365-384.	1.1	22
90	A reappraisal of transition elements in linear elastic fracture mechanics. International Journal of Fracture, 1999, 100, 227-248.	1.1	1

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91	On quadratic isoparametric transition elements for a crack normal to a bimaterial interface. International Journal for Numerical Methods in Engineering, 1999, 46, 457-469.	1.5	5