

# Jose Merodio

## List of Publications by Year in descending order

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90  
papers

2,195  
citations

236833

25  
h-index

265120

42  
g-index

95  
all docs

95  
docs citations

95  
times ranked

832  
citing authors

#	ARTICLE	IF	CITATIONS
1	Mechanical response of fiber-reinforced incompressible non-linearly elastic solids. International Journal of Non-Linear Mechanics, 2005, 40, 213-227.	1.4	220
2	Instabilities and loss of ellipticity in fiber-reinforced compressible non-linearly elastic solids under plane deformation. International Journal of Solids and Structures, 2003, 40, 4707-4727.	1.3	144
3	Extension, inflation and torsion of a residually stressed circular cylindrical tube. Continuum Mechanics and Thermodynamics, 2016, 28, 157-174.	1.4	75
4	The influence of residual stress on finite deformation elastic response. International Journal of Non-Linear Mechanics, 2013, 56, 43-49.	1.4	73
5	The influence of the invariant on the stress-deformation and ellipticity characteristics of doubly fiber-reinforced non-linearly elastic solids. International Journal of Non-Linear Mechanics, 2006, 41, 556-563.	1.4	65
6	Three scales asymptotic homogenization and its application to layered hierarchical hard tissues. International Journal of Solids and Structures, 2018, 130-131, 190-198.	1.3	60
7	A new derivation of the bifurcation conditions of inflated cylindrical membranes of elastic material under axial loading. Application to aneurysm formation. Mechanics Research Communications, 2011, 38, 203-210.	1.0	57
8	Competition between radial expansion and axial propagation in bulging of inflated cylinders with application to aneurysms propagation in arterial wall tissue. International Journal of Engineering Science, 2014, 85, 74-89.	2.7	51
9	Bifurcation of thick-walled cylindrical shells and the mechanical response of arterial tissue affected by Marfan's syndrome. Mechanics Research Communications, 2010, 37, 1-6.	1.0	49
10	A Note on Strong Ellipticity for Transversely Isotropic Linearly Elastic Solids. Quarterly Journal of Mechanics and Applied Mathematics, 2003, 56, 589-591.	0.5	47
11	The effect of initial stress on the propagation of surface waves in a layered half-space. International Journal of Solids and Structures, 2016, 88-89, 88-100.	1.3	46
12	Title is missing!. Journal of Elasticity, 2001, 62, 119-144.	0.9	45
13	On tensile instabilities and ellipticity loss in fiber-reinforced incompressible non-linearly elastic solids. Mechanics Research Communications, 2005, 32, 290-299.	1.0	43
14	Title is missing!. Journal of Elasticity, 2001, 62, 145-170.	0.9	42
15	The elasticity of arterial tissue affected by Marfan's syndrome. Mechanics Research Communications, 2009, 36, 659-668.	1.0	40
16	An asymptotic homogenization approach to the microstructural evolution of heterogeneous media. International Journal of Non-Linear Mechanics, 2018, 106, 245-257.	1.4	39
17	Bifurcation and post-bifurcation of an inflated and extended residually-stressed circular cylindrical tube with application to aneurysms initiation and propagation in arterial wall tissue. Finite Elements in Analysis and Design, 2019, 161, 51-60.	1.7	38
18	Azimuthal Shear of a Transversely Isotropic Elastic Solid. Mathematics and Mechanics of Solids, 2008, 13, 690-724.	1.5	37

#	ARTICLE	IF	CITATIONS
19	Tensile instabilities and ellipticity in fiber-reinforced compressible non-linearly elastic solids. <i>International Journal of Engineering Science</i> , 2005, 43, 697-706.	2.7	36
20	Computational modelling of bulging of inflated cylindrical shells applicable to aneurysm formation and propagation in arterial wall tissue. <i>Finite Elements in Analysis and Design</i> , 2013, 73, 20-29.	1.7	36
21	Homogenized modeling for vascularized poroelastic materials. <i>Meccanica</i> , 2017, 52, 3321-3343.	1.2	36
22	Remarks on instabilities and ellipticity for a fiber-reinforced compressible nonlinearly elastic solid under plane deformation. <i>Quarterly of Applied Mathematics</i> , 2005, 63, 325-333.	0.5	32
23	Bulging bifurcation of inflated circular cylinders of doubly fiber-reinforced hyperelastic material under axial loading and swelling. <i>Mathematics and Mechanics of Solids</i> , 2017, 22, 666-682.	1.5	30
24	Finite elastic deformations of transversely isotropic circular cylindrical tubes. <i>International Journal of Solids and Structures</i> , 2014, 51, 1188-1196.	1.3	27
25	Helical buckling and postbuckling of pre-stressed cylindrical tubes under finite torsion. <i>Finite Elements in Analysis and Design</i> , 2016, 112, 1-10.	1.7	27
26	On constitutive equations for fiber-reinforced nonlinearly viscoelastic solids. <i>Mechanics Research Communications</i> , 2006, 33, 764-770.	1.0	26
27	Homogenized out-of-plane shear response of three-scale fiber-reinforced composites. <i>Computing and Visualization in Science</i> , 2019, 20, 85-93.	1.2	26
28	Remarks on cavity formation in fiber-reinforced incompressible non-linearly elastic solids. <i>European Journal of Mechanics, A/Solids</i> , 2006, 25, 778-792.	2.1	25
29	The rectilinear shear of fiber-reinforced incompressible non-linearly elastic solids. <i>International Journal of Non-Linear Mechanics</i> , 2007, 42, 342-354.	1.4	25
30	The role of porosity and solid matrix compressibility on the mechanical behavior of poroelastic tissues. <i>Materials Research Express</i> , 2019, 6, 035404.	0.8	24
31	On Constitutive Equations For Anisotropic Nonlinearly Viscoelastic Solids. <i>Mathematics and Mechanics of Solids</i> , 2007, 12, 131-147.	1.5	23
32	The role of microscale solid matrix compressibility on the mechanical behaviour of poroelastic materials. <i>European Journal of Mechanics, A/Solids</i> , 2020, 83, 103996.	2.1	23
33	Constitutive structure in coupled non-linear electro-elasticity: Invariant descriptions and constitutive restrictions. <i>International Journal of Non-Linear Mechanics</i> , 2011, 46, 1315-1323.	1.4	22
34	The role of malignant tissue on the thermal distribution of cancerous breast. <i>Journal of Theoretical Biology</i> , 2017, 426, 152-161.	0.8	22
35	A computational model for fiber-reinforced composites: hyperelastic constitutive formulation including residual stresses and damage. <i>Computational Mechanics</i> , 2019, 63, 931-948.	2.2	22
36	On thermodynamically consistent constitutive equations for fiber-reinforced nonlinearly viscoelastic solids with application to biomechanics. <i>Mechanics Research Communications</i> , 2007, 34, 561-571.	1.0	21

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37	Effective properties of regular elastic laminated shell composite. Composites Part B: Engineering, 2016, 87, 12-20.	5.9	21
38	Numerical analysis of neck and bulge propagation in anisotropic tubes subject to axial loading and internal pressure. Finite Elements in Analysis and Design, 2014, 90, 11-19.	1.7	19
39	A nonlinear constitutive model for a two preferred direction electro-elastic body with residual stresses. International Journal of Non-Linear Mechanics, 2020, 119, 103352.	1.4	19
40	Modelling of residually stressed, extended and inflated cylinders with application to aneurysms. Mechanics Research Communications, 2021, 111, 103643.	1.0	19
41	Mathematical modeling of anisotropic avascular tumor growth. Mechanics Research Communications, 2015, 69, 8-14.	1.0	18
42	A nonlinear electro-elastic model with residual stresses and a preferred direction. Mathematics and Mechanics of Solids, 2020, 25, 838-865.	1.5	18
43	On the constitution of polar fiber-reinforced materials. Mechanics of Advanced Materials and Structures, 2021, 28, 2255-2266.	1.5	18
44	Constitutive modeling framework for residually stressed viscoelastic solids at finite strains. Mechanics Research Communications, 2019, 95, 79-84.	1.0	17
45	Computational bifurcation analysis for hyperelastic residually stressed tubes under combined inflation and extension and aneurysms in arterial tissue. Finite Elements in Analysis and Design, 2021, 197, 103636.	1.7	17
46	Action of body forces in tumor growth. International Journal of Engineering Science, 2015, 89, 18-34.	2.7	16
47	Bulging initiation and propagation in fiber-reinforced swellable Mooney-Rivlin membranes. Journal of Engineering Mathematics, 2021, 128, 1.	0.6	16
48	The influence of anisotropic growth and geometry on the stress of solid tumors. International Journal of Engineering Science, 2017, 119, 40-49.	2.7	15
49	Swelling and axial propagation of bulging with application to aneurysm propagation in arteries. Mathematics and Mechanics of Solids, 2020, 25, 1459-1471.	1.5	15
50	Connection between electrical conductivity and diffusion coefficient of a conductive porous material filled with electrolyte. International Journal of Engineering Science, 2017, 121, 108-117.	2.7	14
51	Residually Stressed Fiber Reinforced Solids: A Spectral Approach. Materials, 2020, 13, 4076.	1.3	14
52	Residually stressed two fibre solids: A spectral approach. International Journal of Engineering Science, 2020, 148, 103205.	2.7	14
53	Bifurcation analysis of elastic residually-stressed circular cylindrical tubes. International Journal of Solids and Structures, 2021, 226-227, 111062.	1.3	14
54	Non-smooth solutions in the azimuthal shear of an anisotropic nonlinearly elastic material. Journal of Engineering Mathematics, 2010, 68, 27-36.	0.6	13

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55	The secular equation for non-principal Rayleigh waves in deformed incompressible doubly fiber-reinforced nonlinearly elastic solids. <i>International Journal of Non-Linear Mechanics</i> , 2016, 84, 23-30.	1.4	13
56	Effective predictions of heterogeneous flexoelectric multilayered composite with generalized periodicity. <i>International Journal of Mechanical Sciences</i> , 2020, 181, 105755.	3.6	13
57	On simple constitutive restrictions for transversely isotropic nonlinearly elastic materials and isotropic magneto-sensitive elastomers. <i>Journal of Engineering Mathematics</i> , 2010, 68, 15-26.	0.6	12
58	Modelling the residually stressed magneto-electrically coupled soft elastic materials. <i>International Journal of Non-Linear Mechanics</i> , 2021, 137, 103802.	1.4	12
59	Non-principal Rayleigh waves in deformed transversely isotropic incompressible non-linearly elastic solids. <i>IMA Journal of Applied Mathematics</i> , 2014, 79, 915-928.	0.8	11
60	Rate type constitutive equations for fiber reinforced nonlinearly viscoelastic solids using spectral invariants. <i>Mechanics Research Communications</i> , 2017, 84, 60-64.	1.0	11
61	Two-phase piecewise homogeneous plane deformations of a fibre-reinforced neo-Hookean material with application to fibre kinking and splitting. <i>Journal of the Mechanics and Physics of Solids</i> , 2020, 143, 104091.	2.3	11
62	Deformation induced loss of ellipticity in an anisotropic circular cylindrical tube. <i>Journal of Engineering Mathematics</i> , 2018, 109, 31-45.	0.6	10
63	Nonlinear electro-elastic bodies with residual stresses: spectral formulation. <i>Quarterly Journal of Mechanics and Applied Mathematics</i> , 2018, 71, 485-504.	0.5	10
64	A general non-local constitutive relation for residually stressed solids. <i>Mechanics Research Communications</i> , 2019, 101, 103421.	1.0	10
65	A nonlinear spectral rate-dependent constitutive equation for electro-viscoelastic solids. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2020, 71, 1.	0.7	10
66	Effective governing equations for heterogeneous porous media subject to inhomogeneous body forces. <i>Mathematics in Engineering</i> , 2021, 3, 1-17.	0.5	10
67	On prismatic and bending bifurcations of fiber-reinforced elastic membranes under swelling with application to aortic aneurysms. <i>Mathematics and Mechanics of Solids</i> , 2023, 28, 108-123.	1.5	10
68	Bulging of inflated membranes made of fiber reinforced materials with different natural configurations. <i>European Journal of Mechanics, A/Solids</i> , 2022, 96, 104670.	2.1	10
69	On acoustoelasticity and the elastic constants of soft biological tissues. <i>Journal of Mechanics of Materials and Structures</i> , 2013, 8, 359-367.	0.4	9
70	Wave velocity formulas to evaluate elastic constants of soft biological tissues. <i>Journal of Mechanics of Materials and Structures</i> , 2013, 8, 51-64.	0.4	9
71	Loss of ellipticity in the combined helical, axial and radial elastic deformations of a fibre-reinforced circular cylindrical tube. <i>International Journal of Solids and Structures</i> , 2015, 63, 99-108.	1.3	9
72	Azimuthal shear of doubly fibre-reinforced, non-linearly elastic cylindrical tubes. <i>Journal of Engineering Mathematics</i> , 2015, 95, 347-357.	0.6	8

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73	Asymptotic Homogenization Applied to Flexoelectric Rods. <i>Materials</i> , 2019, 12, 232.	1.3	8
74	Simple closed-form expressions for the effective properties of multilaminated flexoelectric composites. <i>Journal of Engineering Mathematics</i> , 2021, 127, 1.	0.6	8
75	COMPRESSION INSTABILITIES OF TISSUES WITH LOCALIZED STRAIN SOFTENING. <i>International Journal of Applied Mechanics</i> , 2011, 03, 69-83.	1.3	6
76	A hierarchical asymptotic homogenization approach for viscoelastic composites. <i>Mechanics of Advanced Materials and Structures</i> , 2021, 28, 2190-2201.	1.5	6
77	Effective balance equations for elastic composites subject to inhomogeneous potentials. <i>Continuum Mechanics and Thermodynamics</i> , 2018, 30, 145-163.	1.4	5
78	Macroscopic thermal profile of heterogeneous cancerous breasts. A three-dimensional multiscale analysis. <i>International Journal of Engineering Science</i> , 2019, 144, 103135.	2.7	4
79	On weak formulations and their second variation in nonlinear electroelasticity. <i>Mechanics Research Communications</i> , 2012, 46, 15-19.	1.0	3
80	MATHEMATICAL MODELING OF THE INTERPLAY BETWEEN STRESS AND ANISOTROPIC GROWTH OF AVASCULAR TUMORS. <i>Journal of Mechanics in Medicine and Biology</i> , 2018, 18, 1850006.	0.3	3
81	Nonlinear rate-dependent spectral constitutive equation for viscoelastic solids with residual stresses. <i>Journal of Engineering Mathematics</i> , 2021, 129, 1.	0.6	3
82	Finite Deformation Elasticity Theory. <i>Solid Mechanics and Its Applications</i> , 2020, , 17-52.	0.1	3
83	Explicit transfer matrices of pre-stressed elastic layers. <i>International Journal of Non-Linear Mechanics</i> , 2018, 106, 288-296.	1.4	2
84	On the equivalence of strong ellipticity in the material and spatial settings of finite elasticity. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2006, 57, 1096-1101.	0.7	1
85	Preface to the special issue on "Mechanics of Fibre-Reinforced Materials: Theory and Applications, Part II". <i>Journal of Engineering Mathematics</i> , 2015, 95, 1-4.	0.6	1
86	A Semi-Analytical Heterogeneous Model for Thermal Analysis of Cancerous Breasts. <i>Series in Bioengineering</i> , 2017, , 175-190.	0.3	1
87	An approach for modeling non-ageing linear viscoelastic composites with general periodicity. <i>Composite Structures</i> , 2019, 223, 110927.	3.1	1
88	Basic Equations of Continuum Mechanics. <i>Solid Mechanics and Its Applications</i> , 2020, , 1-16.	0.1	1
89	On the Failure of Ellipticity for Compressible Isotropic Nonlinearly Elastic Materials. <i>AIP Conference Proceedings</i> , 2008, , .	0.3	0
90	Foreword to Special Issue celebrating Professor Ray Ogden's 70th birthday. <i>IMA Journal of Applied Mathematics</i> , 2014, 79, 721-721.	0.8	0