

Emilio Barchiesi

List of Publications by Year in descending order

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65
papers

2,576
citations

218381

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197535

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66
times ranked

555
citing authors

#	ARTICLE	IF	CITATIONS
1	Pantographic metamaterials: an example of mathematically driven design and of its technological challenges. <i>Continuum Mechanics and Thermodynamics</i> , 2019, 31, 851-884.	1.4	272
2	Mechanical metamaterials: a state of the art. <i>Mathematics and Mechanics of Solids</i> , 2019, 24, 212-234.	1.5	261
3	Advances in pantographic structures: design, manufacturing, models, experiments and image analyses. <i>Continuum Mechanics and Thermodynamics</i> , 2019, 31, 1231-1282.	1.4	212
4	A strain gradient variational approach to damage: a comparison with damage gradient models and numerical results. <i>Mathematics and Mechanics of Complex Systems</i> , 2018, 6, 77-100.	0.5	156
5	Two-dimensional strain gradient damage modeling: a variational approach. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2018, 69, 1.	0.7	107
6	Energy approach to brittle fracture in strain-gradient modelling. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2018, 474, 20170878.	1.0	102
7	A review on 2D models for the description of pantographic fabrics. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2016, 67, 1.	0.7	96
8	Large in-plane elastic deformations of bi-pantographic fabrics: asymptotic homogenization and experimental validation. <i>Mathematics and Mechanics of Solids</i> , 2020, 25, 739-767.	1.5	72
9	Simulation results for damage with evolving microstructure and growing strain gradient moduli. <i>Continuum Mechanics and Thermodynamics</i> , 2019, 31, 1143-1163.	1.4	71
10	Out-of-plane buckling of pantographic fabrics in displacement-controlled shear tests: experimental results and model validation. <i>Continuum Mechanics and Thermodynamics</i> , 2019, 31, 33-45.	1.4	70
11	Pantographic beam: a complete second gradient 1D-continuum in plane. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2019, 70, 1.	0.7	63
12	A Lagrangian Hencky-type non-linear model suitable for metamaterials design of shearable and extensible slender deformable bodies alternative to Timoshenko theory. <i>International Journal of Non-Linear Mechanics</i> , 2020, 123, 103481.	1.4	63
13	Numerical identification of constitutive parameters in reduced-order bi-dimensional models for pantographic structures: application to out-of-plane buckling. <i>Archive of Applied Mechanics</i> , 2019, 89, 1333-1358.	1.2	60
14	Hemivariational continuum approach for granular solids with damage-induced anisotropy evolution. <i>Mathematics and Mechanics of Solids</i> , 2021, 26, 738-770.	1.5	54
15	Three-point bending test of pantographic blocks: numerical and experimental investigation. <i>Mathematics and Mechanics of Solids</i> , 2020, 25, 1965-1978.	1.5	49
16	Additive manufacturing introduced substructure and computational determination of metamaterials parameters by means of the asymptotic homogenization. <i>Continuum Mechanics and Thermodynamics</i> , 2021, 33, 993-1009.	1.4	47
17	Equilibrium paths of Hencky pantographic beams in a three-point bending problem. <i>Mathematics and Mechanics of Complex Systems</i> , 2019, 7, 287-310.	0.5	46
18	First experimental observation of the dynamical behavior of a pantographic metamaterial. <i>Mechanics Research Communications</i> , 2018, 94, 125-127.	1.0	45

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19	A Review on Models for the 3D Statics and 2D Dynamics of Pantographic Fabrics. <i>Advanced Structured Materials</i> , 2017, , 239-258.	0.3	39
20	Wave dispersion in non-linear pantographic beams. <i>Mechanics Research Communications</i> , 2018, 94, 128-132.	1.0	39
21	A 1D Continuum Model for Beams with Pantographic Microstructure: Asymptotic Micro-Macro Identification and Numerical Results. <i>Advanced Structured Materials</i> , 2018, , 43-74.	0.3	38
22	On the validation of homogenized modeling for bi-pantographic metamaterials via digital image correlation. <i>International Journal of Solids and Structures</i> , 2021, 208-209, 49-62.	1.3	38
23	Equilibria determination of elastic articulated duoskelion beams in 2D via a Riks-type algorithm. <i>International Journal of Non-Linear Mechanics</i> , 2021, 128, 103628.	1.4	36
24	A Multi-disciplinary Approach for Mechanical Metamaterial Synthesis: A Hierarchical Modular Multiscale Cellular Structure Paradigm. <i>Advanced Structured Materials</i> , 2019, , 485-505.	0.3	36
25	Two-dimensional continua capable of large elastic extension in two independent directions: Asymptotic homogenization, numerical simulations and experimental evidence. <i>Mechanics Research Communications</i> , 2020, 103, 103466.	1.0	35
26	Variational asymptotic homogenization of beam-like square lattice structures. <i>Mathematics and Mechanics of Solids</i> , 2019, 24, 3295-3318.	1.5	32
27	Micromechanics-based elasto-plastic damage energy formulation for strain gradient solids with granular microstructure. <i>Continuum Mechanics and Thermodynamics</i> , 2021, 33, 2213-2241.	1.4	29
28	Identification of a geometrically nonlinear micromorphic continuum via granular micromechanics. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2021, 72, 1.	0.7	29
29	Computation of brittle fracture propagation in strain gradient materials by the FEniCS library. <i>Mathematics and Mechanics of Solids</i> , 2021, 26, 325-340.	1.5	27
30	A novel phase-field approach to brittle damage mechanics of gradient metamaterials combining action formalism and history variable. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2021, 101, e202000289.	0.9	23
31	The effect of a pre-existing nanovoid on martensite formation and interface propagation: a phase field study. <i>Mathematics and Mechanics of Solids</i> , 2021, 26, 90-109.	1.5	22
32	On the dependence of standard and gradient elastic material constants on a field of defects. <i>Mathematics and Mechanics of Solids</i> , 2020, 25, 35-45.	1.5	21
33	Granular micromechanics-based identification of isotropic strain gradient parameters for elastic geometrically nonlinear deformations. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2021, 101, e202100059.	0.9	21
34	An Inverse Method to Get Further Analytical Solutions for a Class of Metamaterials Aimed to Validate Numerical Integrations. <i>Advanced Structured Materials</i> , 2017, , 193-210.	0.3	20
35	Identification of Two-Dimensional Pantographic Structures with a Linear D4 Orthotropic Second Gradient Elastic Model Accounting for External Bulk Double Forces. <i>Advanced Structured Materials</i> , 2017, , 211-232.	0.3	19
36	Inverse analysis of metamaterials and parameter determination by means of an automatized optimization problem. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2021, 101, e202000277.	0.9	19

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37	A novel structural resilience index: Definition and applications to frame structures. <i>Mechanics Research Communications</i> , 2019, 99, 52-57.	1.0	17
38	Symmetric-in-Plane Compression of Polyamide Pantographic Fabrics—Modelling, Experiments and Numerical Exploration. <i>Symmetry</i> , 2020, 12, 693.	1.1	17
39	A numerical investigation on impulse-induced nonlinear longitudinal waves in pantographic beams. <i>Mathematics and Mechanics of Solids</i> , 2022, 27, 22-48.	1.5	17
40	Heuristic Homogenization of Euler and Pantographic Beams. <i>CISM International Centre for Mechanical Sciences, Courses and Lectures</i> , 2020, , 123-155.	0.3	15
41	On a hemi-variational formulation for a 2D elasto-plastic-damage strain gradient solid with granular microstructure. <i>Mathematics in Engineering</i> , 2022, 5, 1-24.	0.5	15
42	Non-linear Dynamics of Pantographic Fabrics: Modelling and Numerical Study. <i>Advanced Structured Materials</i> , 2019, , 241-254.	0.3	14
43	Discrete versus homogenized continuum modeling in finite deformation bias extension test of bi-pantographic fabrics. <i>Continuum Mechanics and Thermodynamics</i> , 2020, , 1.	1.4	13
44	Analytical Solutions of 2-dimensional Second Gradient Linear Elasticity for Continua with Cubic-D4 Microstructure. <i>Advanced Structured Materials</i> , 2019, , 383-401.	0.3	12
45	In-plane dynamic buckling of duoskelion beam-like structures: discrete modeling and numerical results. <i>Mathematics and Mechanics of Solids</i> , 2022, 27, 1164-1184.	1.5	11
46	Two-Dimensional Analysis of Size Effects in Strain-Gradient Granular Solids with Damage-Induced Anisotropy Evolution. <i>Journal of Engineering Mechanics - ASCE</i> , 2021, 147, 04021098.	1.6	10
47	Variational Methods in Continuum Damage and Fracture Mechanics. , 2020, , 2634-2643.		8
48	Nonlinear buckling analysis of double-layered graphene nanoribbons based on molecular mechanics. <i>Carbon Letters</i> , 2021, 31, 895-910.	3.3	7
49	A Partial Report on the Controversies About the Principle of Virtual Work: From Archytas of Tarentum to Lagrange, Piola, Mindlin and Toupin. <i>Advanced Structured Materials</i> , 2022, , 341-377.	0.3	7
50	Maximum mechano-damage power release-based phase-field modeling of mass diffusion in damaging deformable solids. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 2022, 73, 1.	0.7	7
51	Investigation of deformation behavior of PETG-FDM-printed metamaterials with pantographic substructures based on different slicing strategies. <i>Composites and Advanced Materials</i> , 2021, 30, 263498332110164.	0.5	6
52	Extensible Beam Models in Large Deformation Under Distributed Loading: A Numerical Study on Multiplicity of Solutions. <i>Advanced Structured Materials</i> , 2019, , 19-41.	0.3	5
53	Multi-scale and multi-physics: towards next-generation engineering materials. <i>Continuum Mechanics and Thermodynamics</i> , 2020, 32, 541-554.	1.4	4
54	Coupled phase field and nonlocal integral elasticity analysis of stress-induced martensitic transformations at the nanoscale: boundary effects, limitations and contradictions. <i>Continuum Mechanics and Thermodynamics</i> , 0, , 1.	1.4	4

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55	A block-based variational elasto-damage model for masonry analysis inspired from granular micromechanics: Preliminary study. <i>Mechanics Research Communications</i> , 2021, 118, 103802.	1.0	4
56	Kinematically triggered nonlinear vibrations of Hencky-type pantographic sheets. <i>Mathematics and Mechanics of Complex Systems</i> , 2021, 9, 311-335.	0.5	4
57	Introductory remarks about the Volume II of the Complete Works of Gabrio Piola. <i>Advanced Structured Materials</i> , 2019, , 1-22.	0.3	2
58	Bone Mechanics and Cell Populations: Mathematical Description and Parametric Study of the Model. <i>Advanced Structured Materials</i> , 2020, , 107-126.	0.3	2
59	On Boundary Layers Observed in Some 1D Second-Gradient Theories. <i>Advanced Structured Materials</i> , 2022, , 359-376.	0.3	2
60	The Effect of Mechanical Load-induced Intraosseous Pressure Gradients on Bone Remodeling. <i>Advanced Structured Materials</i> , 2019, , 29-49.	0.3	1
61	Experimental Investigations of 3D-Deformations in Additively Manufactured Pantographic Structures. <i>Lecture Notes in Mechanical Engineering</i> , 2020, , 101-114.	0.3	1
62	A second gradient continuum formulation for biaxial pantographic fabrics. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2021, 21, .	0.2	1
63	An Insight into Computational Challenges in Damage Mechanics: Analysis of a Softening Hooke's Spring. <i>Advanced Structured Materials</i> , 2022, , 537-564.	0.3	1
64	International Conference on Nonlinear Solid Mechanics 2019: General Topics and Review of Plenary Lectures. <i>Advanced Structured Materials</i> , 2020, , 1-13.	0.3	0
65	Do We Really Need Pantographic Structures?. <i>Advanced Structured Materials</i> , 2021, , 253-268.	0.3	0