

Marco Scalerandi

List of Publications by Year in descending order

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129
papers

2,201
citations

218381

26
h-index

264894

42
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137
all docs

137
docs citations

137
times ranked

1180
citing authors

#	ARTICLE	IF	CITATIONS
1	Proof of Concept for an Ultrasensitive Technique to Detect and Localize Sources of Elastic Nonlinearity Using Phononic Crystals. <i>Physical Review Letters</i> , 2017, 118, 214301.	2.9	128
2	Monitoring evolution of compressive damage in concrete with linear and nonlinear ultrasonic methods. <i>Cement and Concrete Research</i> , 2010, 40, 1106-1113.	4.6	109
3	A scaling method to enhance detection of a nonlinear elastic response. <i>Applied Physics Letters</i> , 2008, 92, .	1.5	96
4	Hysteretic elasticity in damaged concrete: Quantitative analysis of slow and fast dynamics. <i>Physical Review B</i> , 2006, 73, .	1.1	88
5	A spring model for the simulation of the propagation of ultrasonic pulses through imperfect contact interfaces. <i>Journal of the Acoustical Society of America</i> , 1998, 104, 2584-2591.	0.5	87
6	Analysis of elastic nonlinearity using the scaling subtraction method. <i>Physical Review B</i> , 2009, 79, .	1.1	78
7	Modeling nonclassical nonlinearity, conditioning, and slow dynamics effects in mesoscopic elastic materials. <i>Physical Review B</i> , 2003, 68, .	1.1	68
8	Local interaction simulation approach to modelling nonclassical, nonlinear elastic behavior in solids. <i>Journal of the Acoustical Society of America</i> , 2003, 113, 3049.	0.5	68
9	Nonlinear ultrasonic evaluation of load effects on discontinuities in concrete. <i>Cement and Concrete Research</i> , 2010, 40, 340-346.	4.6	68
10	Efficiency of time-reversed acoustics for nonlinear damage detection in solids. <i>Journal of the Acoustical Society of America</i> , 2006, 120, 2506-2517.	0.5	54
11	Nutrient competition as a determinant for cancer growth. <i>Physical Review E</i> , 1999, 59, 2206-2217.	0.8	52
12	Analysis of a "phase transition" from tumor growth to latency. <i>Physical Review E</i> , 2000, 62, 2547-2554.	0.8	51
13	Nonequilibrium and hysteresis in solids: Disentangling conditioning from nonlinear elasticity. <i>Physical Review B</i> , 2010, 81, .	1.1	45
14	Inhibition of Vascularization in Tumor Growth. <i>Physical Review Letters</i> , 2002, 89, 218101.	2.9	43
15	Metamaterials-based sensor to detect and locate nonlinear elastic sources. <i>Applied Physics Letters</i> , 2015, 107, .	1.5	43
16	Electrical impedance for an electrolytic cell. <i>Physical Review E</i> , 2006, 73, 051202.	0.8	42
17	Influence of the ions on the dynamical response of a nematic cell submitted to a dc voltage. <i>Physical Review E</i> , 2004, 69, 051708.	0.8	39
18	Nonlinear acoustic time reversal imaging using the scaling subtraction method. <i>Journal Physics D: Applied Physics</i> , 2008, 41, 215404.	1.3	39

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19	Similarities and differences among the models proposed for real electrodes in the Poisson-Nernst-Planck theory. <i>Journal of Chemical Physics</i> , 2012, 136, 084705.	1.2	38
20	Kortewegâ€™de Vries solitons under additive stochastic perturbations. <i>Physical Review E</i> , 1998, 58, 4166-4173.	0.8	35
21	Nonlinear elastic response of thermally damaged consolidated granular media. <i>Journal of Applied Physics</i> , 2013, 113, 154902.	1.1	35
22	Temperature effects on the elastic properties of hysteretic elastic media: Modeling and simulations. <i>Physical Review B</i> , 2004, 69, .	1.1	34
23	Effects of corrosion on linear and nonlinear elastic properties of reinforced concrete. <i>Cement and Concrete Research</i> , 2013, 51, 96-103.	4.6	32
24	Stress induced conditioning and thermal relaxation in the simulation of quasi-static compression experiments. <i>Journal Physics D: Applied Physics</i> , 2003, 36, 288-293.	1.3	30
25	Ultrasonic Monitoring of the Interaction between Cement Matrix and Alkaline Silicate Solution in Self-Healing Systems. <i>Materials</i> , 2017, 10, 46.	1.3	29
26	Emergence of Taxis and Synergy in Angiogenesis. <i>Physical Review Letters</i> , 2001, 87, 128102.	2.9	28
27	Effects of anatomical constraints on tumor growth. <i>Physical Review E</i> , 2001, 64, 021903.	0.8	26
28	Proof of concept of a frequency-preserving and time-invariant metamaterial-based nonlinear acoustic diode. <i>Scientific Reports</i> , 2019, 9, 9560.	1.6	26
29	Evidence of microstructure evolution in solid elastic media based on a power law analysis. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2015, 22, 334-347.	1.7	25
30	Diffusion with evolving sources and competing sinks: Development of angiogenesis. <i>Physical Review E</i> , 2001, 65, 011902.	0.8	24
31	Evolution of damage-induced nonlinearity in proximity of discontinuities in concrete. <i>International Journal of Solids and Structures</i> , 2010, 47, 1603-1610.	1.3	24
32	Conditioning and elastic nonlinearity in concrete: Separation of damping and phase contributions. <i>Construction and Building Materials</i> , 2018, 161, 208-220.	3.2	24
33	Modelling localized nonlinear damage and analysis of its influence on resonance frequencies. <i>Journal Physics D: Applied Physics</i> , 2006, 39, 3895-3903.	1.3	20
34	Generalization of Berremanâ€™s model to the case of large amplitude of the grooves. <i>Physical Review E</i> , 2008, 77, 051703.	0.8	18
35	Power laws and elastic nonlinearity in materials with complex microstructure. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2016, 380, 413-421.	0.9	18
36	Application of genetic algorithms to ultrasonic tomography. <i>Journal of the Acoustical Society of America</i> , 1998, 104, 1374-1381.	0.5	17

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37	Non-linear model of cancer growth and metastasis: a limiting nutrient as a major determinant of tumor shape and diffusion. <i>Medical Hypotheses</i> , 1999, 53, 497-503.	0.8	17
38	Local interaction simulation approach for the response of the vascular system to metabolic changes of cell behavior. <i>Physical Review E</i> , 2000, 63, 011901.	0.8	17
39	Influence of noise on the threshold for detection of elastic nonlinearity. <i>Journal of Applied Physics</i> , 2013, 113, 043516.	1.1	17
40	Correlation of elastic and mechanical properties of consolidated granular media during microstructure evolution induced by damage and repair. <i>Physical Review Materials</i> , 2018, 2, .	0.9	17
41	Experimental Evidence of Correlations Between Conditioning and Relaxation in Hysteretic Elastic Media. <i>Physical Review Applied</i> , 2019, 12, .	1.5	16
42	Competition effects in the dynamics of tumor cords. <i>Physical Review E</i> , 2002, 65, 051918.	0.8	15
43	Robustness of computational time reversal imaging in media with elastic constant uncertainties. <i>Journal of Applied Physics</i> , 2009, 106, .	1.1	15
44	Break of reciprocity principle due to localized nonlinearities in concrete. <i>Ultrasonics</i> , 2012, 52, 712-719.	2.1	15
45	Numerical simulation of pulse propagation in nonlinear 1-D media. <i>Journal of the Acoustical Society of America</i> , 1999, 106, 2424-2430.	0.5	14
46	Discrimination Between Cracks and Recrystallization in Steel Using Nonlinear Techniques. <i>Journal of Nondestructive Evaluation</i> , 2014, 33, 269-278.	1.1	14
47	Ultrasonic pulse propagation in inhomogeneous one-dimensional media. <i>Journal of the Acoustical Society of America</i> , 1998, 104, 57-63.	0.5	13
48	LISA simulations of time-reversed acoustic and elastic wave experiments. <i>Journal Physics D: Applied Physics</i> , 2002, 35, 3145-3152.	1.3	13
49	Separation of Damping and Velocity Strain Dependencies using an Ultrasonic Monochromatic Excitation. <i>Physical Review Applied</i> , 2019, 11, .	1.5	13
50	A genetic algorithm for determination of the elastic constants of a monoclinic crystal. <i>Inverse Problems</i> , 2000, 16, 121-132.	1.0	12
51	Subharmonic generation in piezoelectrics with Cantor-like structure. <i>Journal Physics D: Applied Physics</i> , 2001, 34, 1579-1586.	1.3	12
52	Detection and location of cracks using loss of reciprocity in ultrasonic waves propagation. <i>Journal of the Acoustical Society of America</i> , 2012, 131, EL81-EL85.	0.5	12
53	Diagnostic application of nonlinear ultrasonics to characterize degradation by expansive salts in masonry systems. <i>NDT and E International</i> , 2013, 55, 57-63.	1.7	12
54	Nonlinear coda wave analysis of hysteretic elastic behavior in strongly scattering media. <i>Physical Review B</i> , 2016, 94, .	1.1	12

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55	Relaxation Times of an Electrolytic Cell Subject to an External Electric Field: Role of Ambipolar and Free Diffusion Phenomena. <i>Journal of Physical Chemistry B</i> , 2007, 111, 13287-13293.	1.2	11
56	Experimentally identifying masked sources applying time reversal with the selective source reduction method. <i>Journal of Applied Physics</i> , 2009, 105, 083506.	1.1	11
57	Modeling dynamic acousto-elastic testing experiments: Validation and perspectives. <i>Journal of the Acoustical Society of America</i> , 2014, 136, 1530-1541.	0.5	11
58	Enhancement of harmonics generation in hysteretic elastic media induced by conditioning. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2017, 45, 117-128.	1.7	11
59	Role of the Adsorption Phenomenon on the Ionic Equilibrium Distribution and on the Transient Effects in Electrolytic Cells. <i>Journal of Physical Chemistry B</i> , 2006, 110, 17889-17897.	1.2	10
60	Frequency dependence of the electrical impedance of electrolytic cells: The role of the ionic adsorption/desorption phenomena and the Stern layer. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2006, 360, 179-182.	0.9	9
61	Selective source reduction to identify masked sources using time reversal acoustics. <i>Journal Physics D: Applied Physics</i> , 2008, 41, 155504.	1.3	9
62	Nonequilibrium phenomena in damaged media and their effects on the elastic properties. <i>Journal of the Acoustical Society of America</i> , 2012, 131, 4304-4315.	0.5	9
63	Time evolution of growth phenomena in the KPZ model. <i>Computer Physics Communications</i> , 1996, 97, 195-198.	3.0	8
64	Pulse distortions in the FD simulation of elastic wave propagation. <i>Mathematical and Computer Modelling</i> , 1997, 25, 31-43.	2.0	8
65	Voltage decay time of a liquid crystal cell submitted to a large difference of potential. <i>Applied Physics Letters</i> , 2006, 89, 214101.	1.5	8
66	Transient effects in electrolytic cells submitted to an external electric field. <i>Liquid Crystals</i> , 2006, 33, 1177-1187.	0.9	8
67	Preisach-Mayergoyz approach to fatigue-induced irreversibility. <i>Physical Review B</i> , 2006, 73, .	1.1	8
68	Continuous waves probing in dynamic acoustoelastic testing. <i>Applied Physics Letters</i> , 2016, 108, 214103.	1.5	8
69	Properties of a phase transition induced by antiangiogenetic therapeutical protocols. <i>Physical Review E</i> , 2002, 66, 031903.	0.8	7
70	SIMULATION OF THE PROPAGATION OF ULTRASONIC PULSES IN NONLINEAR AND/OR ATTENUATIVE MEDIA. <i>Journal of Computational Acoustics</i> , 2002, 10, 275-294.	1.0	6
71	One-channel time reversal acoustics in highly attenuating media. <i>Journal Physics D: Applied Physics</i> , 2013, 46, 135502.	1.3	6
72	Power laws behavior in multi-state elastic models with different constraints in the statistical distribution of elements. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2014, 19, 3628-3641.	1.7	6

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73	Determination of the second- and third-order elastic constants in Al from the natural frequencies. Journal of the Acoustical Society of America, 1997, 102, 193-198.	0.5	5
74	A physical-based model for the simulation of neoplastic growth and metastasis. Journal of Surgical Oncology, 2000, 74, 122-129.	0.8	5
75	Effects of weak anchoring on the equivalent anchoring energy in a nematic cell with large amplitude of the grooves. Journal of Applied Physics, 2008, 104, .	1.1	5
76	Effects of experimental configuration on the detection threshold of hysteretic elastic nonlinearity. Ultrasonics, 2014, 54, 1861-1867.	2.1	5
77	Analysis of Elastic Nonlinearity Using Continuous Waves: Validation and Applications. Applied Sciences (Switzerland), 2019, 9, 5332.	1.3	5
78	Elastic Slow Dynamics in Polycrystalline Metal Alloys. Applied Sciences (Switzerland), 2021, 11, 8631.	1.3	5
79	Markovian model of growth and histologic progression in prostate cancer. Physical Review E, 2004, 70, 011902.	0.8	4
80	Conditioning-induced elastic nonlinearity in hysteric media. Applied Physics A: Materials Science and Processing, 2010, 100, 421-424.	1.1	4
81	Effects of transducer size on impedance spectroscopy measurements. Physical Review E, 2012, 85, 051505.	0.8	4
82	Evidence for frequency dependent diffusion in hydrogel. Journal of Applied Physics, 2014, 116, 094104.	1.1	4
83	Effects of a dc bias on electrical impedance spectroscopy in electrolytic cells. Journal of Molecular Liquids, 2018, 272, 565-571.	2.3	4
84	Material Grain Size Determines Relaxation-Time Distributions in Slow-Dynamics Experiments. Physical Review Applied, 2022, 17, .	1.5	4
85	Time scaling in the parallel processing simulation of diffusion processes. Computers and Mathematics With Applications, 1994, 27, 51-61.	1.4	3
86	Parallel processing simulations of the propagation of ultrasonic waves through material interfaces. , 0, , .		3
87	Acoustoelastic Effects in Elastic Media with Nonuniform Initial Stress. Research in Nondestructive Evaluation, 2000, 12, 105-118.	0.5	3
88	Anomalous Dependence on the Diffusion Coefficients of the Ionic Relaxation Time in Electrolytes. Journal of Physical Chemistry B, 2008, 112, 7273-7279.	1.2	3
89	Behavior of an electrolytic cell containing two groups of ions submitted to a step-like external voltage. European Physical Journal E, 2009, 30, 245-56.	0.7	3
90	Investigation of the validity of Dynamic AcoustoElastic Testing for measuring nonlinear elasticity. Journal of Applied Physics, 2015, 118, 124905.	1.1	3

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91	Exploiting Slow Dynamics Effects for Damage Detection in Concrete. <i>Frontiers in Built Environment</i> , 2020, 6, .	1.2	3
92	Adhesion and plasticity in the dynamic response of rough surfaces in contact. <i>International Journal of Solids and Structures</i> , 2021, 216, 17-29.	1.3	3
93	Efficiency of Different Ultrasonic Surface Waves for Subsurface Flaws Detection. , 1999, , 127-133.		3
94	A stable finite-difference scheme for the Boussinesq equation. <i>Nuovo Cimento Della Societa Italiana Di Fisica D - Condensed Matter, Atomic, Molecular and Chemical Physics, Biophysics</i> , 1998, 20, 1-17.	0.4	2
95	Avascular and vascular phases in tumor cords growth. <i>Mathematical and Computer Modelling</i> , 2003, 37, 1191-1200.	2.0	2
96	Temperature Dependence of the Elastic Properties of Hysteretic Materials. <i>Materials Science Forum</i> , 2005, 480-481, 573-578.	0.3	2
97	A Novel Ultrasonic Technique to Detect Damage Evolution in Quasi-Brittle Materials. <i>Key Engineering Materials</i> , 2007, 347, 633-638.	0.4	2
98	Electrical behavior of nematic cells oriented by polypyrrole surface treatment. <i>Applied Physics Letters</i> , 2009, 95, 064101.	1.5	2
99	Non Destructive Characterization of Concrete Joints Using the Scaling Subtraction Method. <i>Key Engineering Materials</i> , 0, 417-418, 41-44.	0.4	2
100	Break of reciprocity principle induced by cracks in concrete: experimental evidence and applications to nonlinear tomography. <i>Proceedings of Meetings on Acoustics</i> , 2010, , .	0.3	2
101	Treatment of Attenuation and Dispersion in the Propagation of Ultrasonic Pulses. , 1999, , 103-109.		2
102	A renormalization group approach to the simulation of diffusion processes by parallel computers. <i>Mathematical and Computer Modelling</i> , 1994, 19, 1-8.	2.0	1
103	A local interaction simulation approach to the analysis of thin-film growth. <i>The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties</i> , 2000, 80, 507-514.	0.6	1
104	PROPAGATION OF ULTRASONIC WAVES IN NONLINEAR MULTILAYERED MEDIA. <i>Journal of Computational Acoustics</i> , 2001, 09, 1633-1645.	1.0	1
105	Environmental Physical Modulation of Intrinsic Tendency to Growth of Multicellular Tumour Spheroids: In Silico Experiments. <i>Physica Scripta</i> , 2005, , 183.	1.2	1
106	Influence of the medium rigidity on the growth of multicellular tumor spheroids. <i>EPJ Applied Physics</i> , 2005, 30, 65-73.	0.3	1
107	The Role of an Insulating Surface Layer on the Relaxation Time of the Ionic Redistribution in an Electrolytic Cell. <i>Molecular Crystals and Liquid Crystals</i> , 2008, 480, 93-102.	0.4	1
108	SELECTIVE SOURCE REDUCTION TO IDENTIFY MASKED SMALLER SOURCES USING TIME REVERSED ACOUSTICS (TRA). <i>AIP Conference Proceedings</i> , 2008, , .	0.3	1

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109	A comparison of scaling subtraction and pulse compression methods for the analysis of elastic nonlinearity. Proceedings of Meetings on Acoustics, 2019, , .	0.3	1
110	Role of slow dynamics in fast dynamics ultrasonic measurements. Communications in Nonlinear Science and Numerical Simulation, 2020, 91, 105452.	1.7	1
111	Transformation threshold and time-dependent TAF generation in an angiogenesis model. EPJ Applied Physics, 2004, 25, 133-140.	0.3	1
112	Physical Modelling and Simulations of Tumour Growth and Angiogenesis: Predictions and New Hypotheses. Physica Scripta, 2005, , 179.	1.2	1
113	A Novel Ultrasonic Technique to Detect Damage Evolution in Quasi-Brittle Materials. Key Engineering Materials, 0, , 633-638.	0.4	1
114	Robustness of the SSM applied to damage assessment in concrete. Proceedings of Meetings on Acoustics, 2010, , .	0.3	1
115	Characterization of adhesively bonded laminates using non-linear acoustics. , 0, , .		0
116	Exploiting massively parallel architectures for the solution of diffusion and propagation problems. Lecture Notes in Computer Science, 1995, , 1-6.	1.0	0
117	ANALYTICAL AND NUMERICAL SOLUTIONS OF THE FORCED BURGERS EQUATION. , 1995, , .		0
118	A Model For Diffusion and Competition in Cancer Growth and Metastasis. Materials Research Society Symposia Proceedings, 1997, 489, 217.	0.1	0
119	On the Concept of Electrical Impedance for an Electrolytic Cell. Molecular Crystals and Liquid Crystals, 2008, 480, 151-159.	0.4	0
120	Linking Elastic Nonlinearity and Cracks Growth in Mortar Samples. Key Engineering Materials, 0, 417-418, 293-296.	0.4	0
121	Elastic Conditioning, Memory and Relaxation Induced by the Presence of Cracks in Concrete. Key Engineering Materials, 0, 417-418, 253-256.	0.4	0
122	Characterization of damage evolution in non linear media by means of power law exponent: Modeling and experiments. , 2014, , .		0
123	Nonlinear acoustics and acoustic emission methods to monitor damage in mesoscopic elastic materials. , 2015, , 161-166.		0
124	Time Domain Analysis of Elastic Nonlinearity in Concrete Using Continuous Waves. , 2019, , .		0
125	Nonlinear acoustics measurements of intact and damaged samples: fast and slow dynamics. , 2019, , .		0
126	Nonlinear elastic imaging with amplitude and frequency modulated low frequency sources. Applied Physics Letters, 2020, 117, 084101.	1.5	0

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127	Numerical Analysis of the Anomalous Elastic Behavior of Hysteretic Media: Quasistatic, Dynamic, and Relaxation Experiments. , 2006, , 269-285.		0
128	A LISA Model of the Nonlinear and Hysteretic Response of Interstitial Regions to Applied Stresses. , 2006, , 251-267.		0
129	Damping and velocity during conditioning and relaxation in diverse media: an experimental study. Proceedings of Meetings on Acoustics, 2019, , .	0.3	0