

Pedro Miguel Reis

List of Publications by Citations

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85
papers

3,613
citations

33
h-index

59
g-index

88
ext. papers

4,192
ext. citations

8
avg, IF

5.92
L-index

#	Paper	IF	Citations
85	Negative Poisson's ratio behavior induced by an elastic instability. <i>Advanced Materials</i> , 2010 , 22, 361-6	24	511
84	The macroscopic delamination of thin films from elastic substrates. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009 , 106, 10901-6	11.5	195
83	Buckling-induced encapsulation of structured elastic shells under pressure. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, 5978-83	11.5	177
82	Curvature-induced symmetry breaking determines elastic surface patterns. <i>Nature Materials</i> , 2015 , 14, 337-42	27	155
81	Wrinkling hierarchy in constrained thin sheets from suspended graphene to curtains. <i>Physical Review Letters</i> , 2011 , 106, 224301	7.4	150
80	Tearing graphene sheets from adhesive substrates produces tapered nanoribbons. <i>Small</i> , 2010 , 6, 1108-16		144
79	Crystallization of a quasi-two-dimensional granular fluid. <i>Physical Review Letters</i> , 2006 , 96, 258001	7.4	131
78	Caging dynamics in a granular fluid. <i>Physical Review Letters</i> , 2007 , 98, 188301	7.4	122
77	A Perspective on the Revival of Structural (In)Stability With Novel Opportunities for Function: From Buckliphobia to Buckliphilia. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2015 , 82,	2.7	103
76	The Geometric Role of Precisely Engineered Imperfections on the Critical Buckling Load of Spherical Elastic Shells. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2016 , 83,	2.7	101
75	How cats lap: water uptake by <i>Felis catus</i> . <i>Science</i> , 2010 , 330, 1231-4	33.3	92
74	Scratching as a fracture process: from butter to steel. <i>Physical Review Letters</i> , 2011 , 106, 204302	7.4	81
73	A reprogrammable mechanical metamaterial with stable memory. <i>Nature</i> , 2021 , 589, 386-390	50.4	77
72	Smart morphable surfaces for aerodynamic drag control. <i>Advanced Materials</i> , 2014 , 26, 6608-11	24	72
71	Geometry-induced rigidity in nonspherical pressurized elastic shells. <i>Physical Review Letters</i> , 2012 , 109, 144301	7.4	70
70	Designer Matter: A perspective. <i>Extreme Mechanics Letters</i> , 2015 , 5, 25-29	3.9	68
69	Granular segregation as a critical phenomenon. <i>Physical Review Letters</i> , 2002 , 89, 244301	7.4	61

68	Coiling of elastic rods on rigid substrates. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014 , 111, 14663-8	11.5	60
67	Soft Actuation of Structured Cylinders through Auxetic Behavior. <i>Advanced Engineering Materials</i> , 2015 , 17, 815-820	3.5	59
66	Fabrication of slender elastic shells by the coating of curved surfaces. <i>Nature Communications</i> , 2016 , 7, 11155	17.4	54
65	Continuation of equilibria and stability of slender elastic rods using an asymptotic numerical method. <i>Journal of the Mechanics and Physics of Solids</i> , 2013 , 61, 1712-1736	5	51
64	Buckling of a Pressurized Hemispherical Shell Subjected to a Probing Force. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2017 , 84,	2.7	49
63	Shapes of a suspended curly hair. <i>Physical Review Letters</i> , 2014 , 112, 068103	7.4	48
62	Wrinkling crystallography on spherical surfaces. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 14-9	11.5	44
61	Localization of deformation in thin shells under indentation. <i>Soft Matter</i> , 2013 , 9, 6796	3.6	42
60	Forcing independent velocity distributions in an experimental granular fluid. <i>Physical Review E</i> , 2007 , 75, 051311	2.4	42
59	Form finding in elastic gridshells. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018 , 115, 75-80	11.5	40
58	Transforming architectures inspired by origami. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 12234-5	11.5	39
57	Propulsion and Instability of a Flexible Helical Rod Rotating in a Viscous Fluid. <i>Physical Review Letters</i> , 2015 , 115, 168101	7.4	39
56	Localization through surface folding in solid foams under compression. <i>Physical Review Letters</i> , 2009 , 103, 045501	7.4	37
55	Cracks in thin sheets: when geometry rules the fracture path. <i>Physical Review Letters</i> , 2005 , 95, 025502	7.4	36
54	Buckling-induced lock-up of a slender rod injected into a horizontal cylinder. <i>International Journal of Solids and Structures</i> , 2015 , 72, 153-164	3.1	35
53	Buckling of an elastic rod embedded on an elastomeric matrix: planar vs. non-planar configurations. <i>Soft Matter</i> , 2014 , 10, 6294-302	3.6	33
52	Curvature-Controlled Defect Localization in Elastic Surface Crystals. <i>Physical Review Letters</i> , 2016 , 116, 104301	7.4	32
51	Grabbing water. <i>Soft Matter</i> , 2010 , 6, 5705	3.6	32

50	Untangling the mechanics and topology in the frictional response of long overhand elastic knots. <i>Physical Review Letters</i> , 2015 , 115, 118302	7.4	29
49	Technical Brief: Knockdown Factor for the Buckling of Spherical Shells Containing Large-Amplitude Geometric Defects. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2017 , 84,	2.7	28
48	Gases, liquids and crystals in granular segregation. <i>Europhysics Letters</i> , 2004 , 66, 357-363	1.6	27
47	The clapping book: wind-driven oscillations in a stack of elastic sheets. <i>Physical Review Letters</i> , 2010 , 105, 194301	7.4	26
46	Segregation mechanisms in a numerical model of a binary granular mixture. <i>Physical Review E</i> , 2005 , 71, 041301	2.4	25
45	Soft Color Composites with Tunable Optical Transmittance. <i>Advanced Optical Materials</i> , 2016 , 4, 620-626	3.1	24
44	Phases of granular segregation in a binary mixture. <i>Physical Review E</i> , 2006 , 74, 051306	2.4	22
43	Designing soft materials with interfacial instabilities in liquid films. <i>Nature Communications</i> , 2018 , 9, 4477	7.4	22
42	Buckling of pressurized spherical shells containing a through-thickness defect. <i>Journal of the Mechanics and Physics of Solids</i> , 2020 , 138, 103923	5	17
41	Contorting a heavy and naturally curved elastic rod. <i>Soft Matter</i> , 2013 , 9, 8274	3.6	17
40	Rigidity of hemispherical elastic gridshells under point load indentation. <i>Journal of the Mechanics and Physics of Solids</i> , 2019 , 124, 411-426	5	17
39	A Geometric Model for the Coiling of an Elastic Rod Deployed Onto a Moving Substrate. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2015 , 82,	2.7	16
38	Localized Structures in Indented Shells: A Numerical Investigation. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2014 , 81,	2.7	16
37	Buckling patterns in biaxially pre-stretched bilayer shells: wrinkles, creases, folds and fracture-like ridges. <i>Soft Matter</i> , 2017 , 13, 7969-7978	3.6	15
36	Rolling ribbons. <i>Physical Review Letters</i> , 2010 , 105, 044301	7.4	15
35	Magneto-active elastic shells with tunable buckling strength. <i>Nature Communications</i> , 2021 , 12, 2831	17.4	15
34	Reversible patterning of spherical shells through constrained buckling. <i>Physical Review Materials</i> , 2017 , 1,	3.2	13
33	Pattern morphology in the elastic sewing machine. <i>Extreme Mechanics Letters</i> , 2014 , 1, 76-82	3.9	12

32	Dynamics of a flexible helical filament rotating in a viscous fluid near a rigid boundary. <i>Physical Review Fluids</i> , 2017 , 2,	2.8	11
31	Deformation of a soft helical filament in an axial flow at low Reynolds number. <i>Soft Matter</i> , 2016 , 12, 1898-905	3.6	10
30	Evolution of critical buckling conditions in imperfect bilayer shells through residual swelling. <i>Soft Matter</i> , 2019 , 15, 6134-6144	3.6	9
29	Probing the buckling of pressurized spherical shells. <i>Journal of the Mechanics and Physics of Solids</i> , 2021 , 155, 104545	5	9
28	Extending the Reach of a Rod Injected Into a Cylinder Through Distributed Vibration. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2015 , 82,	2.7	8
27	Granular Thermodynamics 2009 ,		7
26	Unzip instabilities: Straight to oscillatory transitions in the cutting of thin polymer sheets. <i>Europhysics Letters</i> , 2008 , 82, 64002	1.6	7
25	Active aerodynamic drag reduction on morphable cylinders. <i>Physical Review Fluids</i> , 2017 , 2,	2.8	7
24	A comprehensive framework for hard-magnetic beams: Reduced-order theory, 3D simulations, and experiments. <i>International Journal of Solids and Structures</i> , 2021 , 111319	3.1	7
23	Aeroelastic deformation of a perforated strip. <i>Physical Review Fluids</i> , 2018 , 3,	2.8	5
22	Deformation of porous flexible strip in low and moderate Reynolds number flows. <i>Physical Review Fluids</i> , 2020 , 5,	2.8	5
21	Bending Response of a Book with Internal Friction. <i>Physical Review Letters</i> , 2021 , 126, 218004	7.4	5
20	Patterns of Carbon Nanotubes by Flow-Directed Deposition on Substrates with Architected Topographies. <i>Nano Letters</i> , 2018 , 18, 1660-1667	11.5	4
19	Fabrication of flexible blade models from a silicone-based polymer to test the effect of surface corrugations on drag and blade motion. <i>Limnology and Oceanography: Methods</i> , 2015 , 13, 630-639	2.6	4
18	Comment on "Crack street: the cycloidal wake of a cylinder tearing through a thin sheet". <i>Physical Review Letters</i> , 2005 , 94, 129601; author reply 129602	7.4	4
17	The shapes of physical trefoil knots. <i>Extreme Mechanics Letters</i> , 2021 , 43, 101172	3.9	4
16	On the water lapping of felines and the water running of lizards: A unifying physical perspective. <i>Communicative and Integrative Biology</i> , 2011 , 4, 213-5	1.7	3
15	Finite Element Modeling of Tight Elastic Knots. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2021 , 88,	2.7	3

14	Printing on liquid elastomers. <i>Soft Matter</i> , 2020 , 16, 3137-3142	3.6	2
13	Smart Surfaces: Smart Morphable Surfaces for Aerodynamic Drag Control (Adv. Mater. 38/2014). <i>Advanced Materials</i> , 2014 , 26, 6659-6659	24	2
12	A Kirchhoff-like theory for hard magnetic rods under geometrically nonlinear deformation in three dimensions. <i>Journal of the Mechanics and Physics of Solids</i> , 2022 , 160, 104739	5	2
11	A Weak Form Implementation of Nonlinear Axisymmetric Shell Equations With Examples. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2019 , 86,	2.7	2
10	Mechanics of two filaments in tight orthogonal contact. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021 , 118,	11.5	2
9	Smooth Triaxial Weaving with Naturally Curved Ribbons. <i>Physical Review Letters</i> , 2021 , 127, 104301	7.4	2
8	Programmable Aerodynamic Drag on Active Dimpled Cylinders. <i>Advanced Engineering Materials</i> , 2019 , 21, 1801315	3.5	1
7	Extending the Reach of a Rod Injected Into a Cylinder Through Axial Rotation. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2016 , 83,	2.7	1
6	Cracking sheets: oscillatory fracture paths in thin elastic sheets. <i>Chaos</i> , 2008 , 18, 041108	3.3	1
5	The remarkable bending properties of perforated plates. <i>Journal of the Mechanics and Physics of Solids</i> , 2021 , 154, 104514	5	1
4	An elastic rod in frictional contact with a rigid cylinder. <i>Journal of the Mechanics and Physics of Solids</i> , 2022 , 104885	5	1
3	A geometrically exact model for thin magneto-elastic shells. <i>Journal of the Mechanics and Physics of Solids</i> , 2022 , 104916	5	1
2	Response to Comment on "How Cats Lap: Water Uptake by <i>Felis catus</i> ". <i>Science</i> , 2011 , 334, 311-311	33.3	
1	Exploring the inner workings of the clove hitch knot. <i>Extreme Mechanics Letters</i> , 2022 , 101788	3.9	