

Sergio Pellegrino

List of Publications by Year in descending order

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139
papers

5,027
citations

101543

36
h-index

102487

66
g-index

141
all docs

141
docs citations

141
times ranked

2142
citing authors

#	ARTICLE	IF	CITATIONS
1	Matrix analysis of statically and kinematically indeterminate frameworks. <i>International Journal of Solids and Structures</i> , 1986, 22, 409-428.	2.7	618
2	Structural computations with the singular value decomposition of the equilibrium matrix. <i>International Journal of Solids and Structures</i> , 1993, 30, 3025-3035.	2.7	334
3	Bistable prestressed shell structures. <i>International Journal of Solids and Structures</i> , 2004, 41, 2801-2820.	2.7	198
4	First-order infinitesimal mechanisms. <i>International Journal of Solids and Structures</i> , 1991, 27, 505-515.	2.7	174
5	Deployable Tensegrity Reflectors for Small Satellites. <i>Journal of Spacecraft and Rockets</i> , 2002, 39, 701-709.	1.9	172
6	Analysis of prestressed mechanisms. <i>International Journal of Solids and Structures</i> , 1990, 26, 1329-1350.	2.7	161
7	Wrinkled membranes III: numerical simulations. <i>Journal of Mechanics of Materials and Structures</i> , 2006, 1, 63-95.	0.6	160
8	Wrinkled membranes I: experiments. <i>Journal of Mechanics of Materials and Structures</i> , 2006, 1, 3-25.	0.6	155
9	Wrinkled membranes II: analytical models. <i>Journal of Mechanics of Materials and Structures</i> , 2006, 1, 27-61.	0.6	125
10	Folding and deployment of curved tape springs. <i>International Journal of Mechanical Sciences</i> , 2000, 42, 2055-2073.	6.7	122
11	Using CubeSat/micro-satellite technology to demonstrate the Autonomous Assembly of a Reconfigurable Space Telescope (AAReST). <i>Acta Astronautica</i> , 2015, 114, 112-122.	3.2	119
12	A new concept for solid surface deployable antennas. <i>Acta Astronautica</i> , 1996, 38, 103-113.	3.2	115
13	Quasi-Static Folding and Deployment of Ultrathin Composite Tape-Spring Hinges. <i>Journal of Spacecraft and Rockets</i> , 2011, 48, 187-198.	1.9	104
14	An introduction to the analysis of symmetric structures. <i>Computers and Structures</i> , 1999, 71, 671-688.	4.4	91
15	UHF Deployable Helical Antennas for CubeSats. <i>IEEE Transactions on Antennas and Propagation</i> , 2016, 64, 3752-3759.	5.1	66
16	Multi-objective optimization of free-form grid structures. <i>Structural and Multidisciplinary Optimization</i> , 2010, 40, 257-269.	3.5	63
17	Manufacture of Arbitrary Cross-Section Composite Honeycomb Cores Based on Origami Techniques. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2014, 136, .	2.9	59
18	Architecture for in-space robotic assembly of a modular space telescope. <i>Journal of Astronomical Telescopes, Instruments, and Systems</i> , 2016, 2, 041207.	1.8	59

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19	Deployment Dynamics of Ultrathin Composite Booms with Tape-Spring Hinges. Journal of Spacecraft and Rockets, 2014, 51, 604-613.	1.9	57
20	A flexible phased array system with low areal mass density. Nature Electronics, 2019, 2, 195-205.	26.0	56
21	Effects of Long-Term Stowage on the Deployment of Bistable Tape Springs. Journal of Applied Mechanics, Transactions ASME, 2016, 83, .	2.2	55
22	Systematically Creased Thin-Film Membrane Structures. Journal of Spacecraft and Rockets, 2008, 45, 10-18.	1.9	52
23	Composite Tube Hinges. Journal of Aerospace Engineering, 2005, 18, 224-231.	1.4	51
24	Folding, Stowage, and Deployment of Viscoelastic Tape Springs. AIAA Journal, 2013, 51, 1908-1918.	2.6	51
25	Ultralight Structures for Space Solar Power Satellites. , 2016, , .		50
26	Topological Optimization of Compliant Adaptive Wing Structure. AIAA Journal, 2009, 47, 523-534.	2.6	49
27	Imperfection-insensitive axially loaded thin cylindrical shells. International Journal of Solids and Structures, 2015, 62, 39-51.	2.7	48
28	Micromechanics Models for Viscoelastic Plain-Weave Composite Tape Springs. AIAA Journal, 2017, 55, 309-321.	2.6	48
29	Folding of fiber composites with a hyperelastic matrix. International Journal of Solids and Structures, 2012, 49, 395-407.	2.7	47
30	Design of Ultrathin Composite Self-Deployable Booms. Journal of Spacecraft and Rockets, 2014, 51, 1811-1821.	1.9	47
31	A zero-stiffness elastic shell structure. Journal of Mechanics of Materials and Structures, 2011, 6, 203-212.	0.6	46
32	Constitutive modeling of fiber composites with a soft hyperelastic matrix. International Journal of Solids and Structures, 2012, 49, 635-647.	2.7	44
33	Space Frames with Multiple Stable Configurations. AIAA Journal, 2007, 45, 1740-1747.	2.6	43
34	Matrix formulation of macro-elements for deployable structures. Computers and Structures, 1994, 50, 237-254.	4.4	41
35	A Novel Actuated Composite Tape-Spring for Deployable Structures. , 2004, , .		40
36	Folding Large Antenna Tape Spring. Journal of Spacecraft and Rockets, 2008, 45, 560-567.	1.9	40

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37	Large retractable appendages in spacecraft. <i>Journal of Spacecraft and Rockets</i> , 1995, 32, 1006-1014.	1.9	39
38	Compliant multistable structural elements. <i>International Journal of Solids and Structures</i> , 2008, 45, 6190-6204.	2.7	39
39	Origami Sunshield Concepts for Space Telescopes. , 2013, , .		38
40	Shape optimization of cover plates for retractable roof structures. <i>Computers and Structures</i> , 2004, 82, 1227-1236.	4.4	36
41	Ultralightweight deformable mirrors. <i>Applied Optics</i> , 2013, 52, 5327.	1.8	35
42	A Theory for the Design of Multi-Stable Morphing Structures. <i>Journal of the Mechanics and Physics of Solids</i> , 2020, 136, 103772.	4.8	35
43	Prestressing a space structure. <i>AIAA Journal</i> , 1993, 31, 1961-1963.	2.6	33
44	Buckling pressure of "pumpkin" balloons. <i>International Journal of Solids and Structures</i> , 2007, 44, 6963-6986.	2.7	33
45	Trajectory Planning for CubeSat Short-Time-Scale Proximity Operations. <i>Journal of Guidance, Control, and Dynamics</i> , 2014, 37, 566-579.	2.8	33
46	Thin-Shell Deployable Reflectors with Collapsible Stiffeners Part 1: Approach. <i>AIAA Journal</i> , 2006, 44, 2515-2523.	2.6	32
47	Closed cross-section dual-matrix composite hinge for deployable structures. <i>Composite Structures</i> , 2019, 208, 784-795.	5.8	30
48	Further remarks on first-order infinitesimal mechanisms. <i>International Journal of Solids and Structures</i> , 1992, 29, 2119-2122.	2.7	29
49	Nonlinear vibration of cable-stiffened pantographic deployable structures. <i>Journal of Sound and Vibration</i> , 2008, 314, 783-802.	3.9	29
50	ABD Matrix of Single-Ply Triaxial Weave Fabric Composites. , 2007, , .		28
51	Failure criterion for two-ply plain-weave CFRP laminates. <i>Journal of Composite Materials</i> , 2013, 47, 1357-1375.	2.4	28
52	Nonlinear elastic buckling of ultra-thin coilable booms. <i>International Journal of Solids and Structures</i> , 2020, 203, 46-56.	2.7	28
53	Characterization of Ultra-Thin Composite Triangular Rollable and Collapsible Booms. , 2017, , .		27
54	Experiments on imperfection insensitive axially loaded cylindrical shells. <i>International Journal of Solids and Structures</i> , 2017, 115-116, 73-86.	2.7	25

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55	reduction of equilibrium, compatibility and flexibility matrices, in the force method. International Journal for Numerical Methods in Engineering, 1992, 35, 1219-1236.	2.8	24
56	Wrinkling of Orthotropic Viscoelastic Membranes. AIAA Journal, 2012, 50, 668-681.	2.6	22
57	Concept and Design of a Multistable Plate Structure. Journal of Mechanical Design, Transactions of the ASME, 2011, 133, .	2.9	21
58	Crease-free biaxial packaging of thick membranes with slipping folds. International Journal of Solids and Structures, 2017, 108, 24-39.	2.7	19
59	Vibration of Prestressed Membrane Structures in Air. , 2002, , .		18
60	Design and Validation of Thin-Walled Composite Deployable Booms with tape-Spring Hinges. , 2011, , .		18
61	Nonlinear dynamic analysis of creased shells. Finite Elements in Analysis and Design, 2016, 121, 64-74.	3.2	18
62	Thermoviscoelastic models for polyethylene thin films. Mechanics of Time-Dependent Materials, 2016, 20, 13-43.	4.4	17
63	Large-Area Deployable Reflectarray Antenna for CubeSats. , 2019, , .		16
64	Viscoelastic effects in tape-springs. , 2011, , .		15
65	Ultralight Deployable Space Structure Prototype. , 2020, , .		15
66	Solution of equilibrium equations in the force method: A compact band scheme for underdetermined linear systems. Computers and Structures, 1990, 37, 743-751.	4.4	14
67	Wrinkling of transversely loaded spinning membranes. International Journal of Solids and Structures, 2018, 139-140, 163-173.	2.7	14
68	Viscoelastic behaviour of pumpkin balloons. Advances in Space Research, 2008, 42, 1683-1690.	2.6	13
69	Space-quality data from balloon-borne telescopes: The High Altitude Lensing Observatory (HALO). Astroparticle Physics, 2012, 38, 31-40.	4.3	13
70	Thin-Shell Deployable Reflectors with Collapsible Stiffeners: Experiments and Simulations. AIAA Journal, 2012, 50, 659-667.	2.6	13
71	Parylene origami structure for introcular implantation. , 2013, , .		13
72	Maximally stable lobed balloons. International Journal of Solids and Structures, 2010, 47, 1496-1507.	2.7	12

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73	Nonlinear thermomechanical response and constitutive modeling of viscoelastic polyethylene membranes. <i>Mechanics of Materials</i> , 2018, 117, 9-21.	3.2	12
74	Structural Architectures for a Deployable Wideband UHF Antenna. , 2012, , .		11
75	Deployable helical antennas for cubesats. , 2013, , .		11
76	Bloch wave buckling analysis of axially loaded periodic cylindrical shells. <i>Computers and Structures</i> , 2016, 177, 114-125.	4.4	11
77	Shape Recovery of Viscoelastic Deployable Structures. , 2010, , .		10
78	Micromechanical modeling of deployment and shape recovery of thin-walled viscoelastic composite space structures. , 2012, , .		10
79	Post-cure shape errors of ultra-thin symmetric CFRP laminates: Effect of ply-level imperfections. <i>Composite Structures</i> , 2017, 164, 237-247.	5.8	10
80	Self-Deployable Joints for Ultra-Light Space Structures. , 2018, , .		10
81	Stress Concentration and Material Failure During Coiling of Ultra-Thin TRAC Booms. , 2018, , .		10
82	Computation of Partially Inflated Shapes of Stratospheric Balloon Structures. , 2008, , .		9
83	Design, fabrication and testing of active carbon shell mirrors for space telescope applications. , 2014, , .		9
84	Wrapping Thick Membranes with Slipping Folds. , 2015, , .		9
85	Searching for imperfection insensitive externally pressurized near-spherical thin shells. <i>Journal of the Mechanics and Physics of Solids</i> , 2018, 120, 49-67.	4.8	9
86	Ultralight Spacecraft Structure Prototype. , 2019, , .		9
87	Origami-Inspired Shape-Changing Phased Array. , 2021, , .		9
88	Failure of Carbon Fibers at a Crease in a Fiber-Reinforced Silicone Sheet. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2013, 80, .	2.2	8
89	Deployment mechanics of highly compacted thin membrane structures. , 2014, , .		8
90	Cure-induced deformation of ultra-thin composite laminates. , 2018, , .		8

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91	Reducing Stress Concentration in the Transition Region of Coilable Ultra-Thin-Shell Booms. , 2019, , .		8
92	Tension-Stabilized Coiling of Isotropic Tape Springs. International Journal of Solids and Structures, 2020, 188-189, 103-117.	2.7	8
93	Probing the Stability of Ladder-Type Coilable Space Structures. AIAA Journal, 2022, 60, 2000-2012.	2.6	8
94	Large Strain Viscoelastic Model for Balloon Film. , 2011, , .		7
95	Ultra-Thin Highly Deformable Composite Mirrors. , 2013, , .		7
96	Optimized actuators for ultrathin deformable primary mirrors. Applied Optics, 2015, 54, 4937.	2.1	7
97	Folding and Deployment of Closed Cross-Section Dual-Matrix Composite Booms. , 2016, , .		7
98	Nonlinear vibration of transversely-loaded spinning membranes. Journal of Sound and Vibration, 2018, 427, 41-62.	3.9	7
99	Deployment Dynamics of Thin-Shell Space Structures. Journal of Spacecraft and Rockets, 2022, 59, 1214-1227.	1.9	7
100	Stability of lobed balloons. Advances in Space Research, 2006, 37, 2059-2069.	2.6	6
101	Effects of Component Properties on the Accuracy of a Joint-Dominated Deployable Mast. , 2011, , .		6
102	Characterization of a high strain composite material. , 2012, , .		6
103	Self-Supporting Membrane Structures with Curved Creases for Smooth Packaging and Deployment. , 2014, , .		6
104	Viscoplastic tearing of polyethylene thin film. Mechanics of Time-Dependent Materials, 2015, 19, 187-208.	4.4	6
105	Topology and Shape Optimization of Ultrathin Composite Self-Deployable Shell Structures with Cutouts. AIAA Journal, 2021, 59, 3696-3709.	2.6	6
106	Folding and Deployment of Thin Shell Structures. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2015, , 179-267.	0.6	6
107	Development of the Deployable on-Orbit ultraLight Composite Experiment (DOLCE) for the Space Solar Power Project Demonstration Mission. , 2022, , .		6
108	Modelling of Seabed Interaction in Frequency Domain Analysis of Mooring Cables. , 2003, , 663.		5

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109	Shape correction of thin mirrors in a reconfigurable modular space telescope. Proceedings of SPIE, 2010, , .	0.8	5
110	Thin deformable mirrors for a reconfigurable space telescope. , 2012, , .		5
111	Shape reconstruction of planar flexible spacecraft structures using distributed sun sensors. Acta Astronautica, 2021, 180, 328-339.	3.2	5
112	Manufacture of Arbitrary Cross-Section Composite Honeycomb Cores Based on Origami Techniques. , 2013, , .		5
113	Anisotropic Viscoelasticity and Wrinkling of Superpressure Balloons: Simulation and Experimental Verification. , 2009, , .		4
114	Design and testing of imperfection-insensitive monocoque cylindrical shells. , 2013, , .		4
115	In-space Shape Measurement of Large Planar Structures. , 2017, , .		4
116	Shear-induced buckling of a thin elastic disk undergoing spin-up. International Journal of Solids and Structures, 2019, 166, 75-82.	2.7	4
117	Topology Optimization of Composite Self-Deployable Thin Shells with Cutouts. , 2019, , .		4
118	Deployment Dynamics of Foldable Thin Shell Space Structures. , 2021, , .		4
119	Lightweight Composite Reflectarray that can be Flattened, Folded, and Coiled for Compact Stowage. , 2022, , .		4
120	A Technique to Predict Clefting of Lobed Super-Pressure Balloons. , 2011, , .		3
121	Shape Correction of Thin Mirrors. , 2011, , .		3
122	Design algorithm for the placement of identical segments in a large spherical mirror. Journal of Astronomical Telescopes, Instruments, and Systems, 2015, 1, 024002.	1.8	3
123	Dual-Matrix Composite Wideband Antenna Structures for CubeSats. , 2015, , .		3
124	Multilayer active shell mirrors for space telescopes. , 2016, , .		3
125	Co-phasing primary mirror segments of an optical space telescope using a long stroke Zernike WFS. Proceedings of SPIE, 2016, , .	0.8	3
126	Size effects in plain-weave Astroquartz® deployable thin shells. Journal of Composite Materials, 2021, 55, 2417-2430.	2.4	3

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127	Probing the stability of thin-shell space structures under bending. International Journal of Solids and Structures, 2022, 257, 111806.	2.7	3
128	Optimization of electrode configuration in surface-parallel actuated deformable mirrors. Proceedings of SPIE, 2014, , .	0.8	2
129	Experimental Study of Time-dependent Failure of High Strain Composites. , 2020, , .		2
130	Folding of Thin Composite Structures with a Soft Matrix. , 2009, , .		1
131	Wrinkling of Orthotropic Viscoelastic Membranes. , 2010, , .		1
132	Packaging and deployment strategies for synthetic aperture radar membrane antenna arrays. , 2014, , .		1
133	Shape Measurement of Large Structures in Space: Experiments. , 2018, , .		1
134	Parametric Design of Conforming Joints for Thin-Shell Coilable Structures. , 2019, , .		1
135	Time-efficient geometrically non-linear finite element simulations of thin shell deployable structures. , 2021, , .		1
136	Design algorithm for the placement of identical segments in a large spherical mirror. Journal of Astronomical Telescopes, Instruments, and Systems, 2015, 1, 014007.	1.8	0
137	Large-Strain Viscoelastic Constitutive Models for Thin Polyethylene Films. , 2015, , .		0
138	Micromechanics Modeling of Time-dependent Failure of Stowed High-strain Composite Structures. , 2022, , .		0
139	Inextensible Surface Reconstruction Under Small Relative Deformations from Distributed Angle Measurements. International Journal of Computer Vision, 2022, 130, 594.	15.6	0