Miguel Cervera

List of Publications by Year
in descending order

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130	6,454	43973	74018
papers	citations	48 h-index	75 g-index

137	137	137	3787
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Structural Analysis of Masonry Historical Constructions. Classical and Advanced Approaches. Archives of Computational Methods in Engineering, 2010, 17, 299-325.	6.0	473
2	A strain-based plastic viscous-damage model for massive concrete structures. International Journal of Solids and Structures, 1998, 35, 1533-1558.	1.3	377
3	Strong discontinuities and continuum plasticity models: the strong discontinuity approach. International Journal of Plasticity, 1999, 15, 319-351.	4.1	193
4	Finite element modeling of multi-pass welding and shaped metal deposition processes. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 2343-2359.	3.4	171
5	Thermo-Chemo-Mechanical Model for Concrete. I: Hydration and Aging. Journal of Engineering Mechanics - ASCE, 1999, 125, 1018-1027.	1.6	157
6	Non-random dispersal in the butterfly Maniola jurtina : implications for metapopulation models. Proceedings of the Royal Society B: Biological Sciences, 2000, 267, 1505-1510.	1.2	156
7	Numerical prediction of temperature and density distributions in selective laser sintering processes. Rapid Prototyping Journal, 1999, 5, 21-26.	1.6	141
8	Seismic evaluation of concrete dams via continuum damage models. Earthquake Engineering and Structural Dynamics, 1995, 24, 1225-1245.	2.5	134
9	A RATE-DEPENDENT ISOTROPIC DAMAGE MODEL FOR THE SEISMIC ANALYSIS OF CONCRETE DAMS. Earthquake Engineering and Structural Dynamics, 1996, 25, 987-1010.	2.5	122
10	Smeared crack approach: back to the original track. International Journal for Numerical and Analytical Methods in Geomechanics, 2006, 30, 1173-1199.	1.7	122
11	An orthotropic damage model for the analysis of masonry structures. Construction and Building Materials, 2013, 41, 957-967.	3.2	120
12	Residual stress and distortion of rectangular and S-shaped Ti-6Al-4V parts by Directed Energy Deposition: Modelling and experimental calibration. Additive Manufacturing, 2019, 26, 166-179.	1.7	120
13	Numerical modeling of friction stir welding processes. Computer Methods in Applied Mechanics and Engineering, 2013, 254, 353-369.	3.4	106
14	Mixed stabilized finite element methods in nonlinear solid mechanics. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 2559-2570.	3.4	105
15	Numerical modelling of concrete curing, regarding hydration and temperature phenomena. Computers and Structures, 2002, 80, 1511-1521.	2.4	104
16	Continuum damage model for orthotropic materials: Application to masonry. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 917-930.	3.4	98
17	Numerical modelling and experimental validation in Selective Laser Melting. Additive Manufacturing, 2017, 18, 171-185.	1.7	98
18	Mixed stabilized finite element methods in nonlinear solid mechanics. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 2571-2589.	3.4	95

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19	A stabilized formulation for incompressible elasticity using linear displacement and pressure interpolations. Computer Methods in Applied Mechanics and Engineering, 2002, 191, 5253-5264.	3.4	93
20	Numerical simulation and experimental calibration of additive manufacturing by blown powder technology. Part I: thermal analysis. Rapid Prototyping Journal, 2017, 23, 448-463.	1.6	88
21	A finite volume format for structural mechanics. International Journal for Numerical Methods in Engineering, 1994, 37, 181-201.	1.5	87
22	Mixed linear/linear simplicial elements for incompressible elasticity and plasticity. Computer Methods in Applied Mechanics and Engineering, 2003, 192, 5249-5263.	3.4	85
23	Mesh objective tensile cracking via a local continuum damage model and a crack tracking technique. Computer Methods in Applied Mechanics and Engineering, 2006, 196, 304-320.	3.4	84
24	Finite element analysis and experimental validation of the thermomechanical behavior in laser solid forming of Ti-6Al-4V. Additive Manufacturing, 2018, 21, 30-40.	1.7	81
25	On the computational efficiency and implementation of blockâ€iterative algorithms for nonlinear coupled problems. Engineering Computations, 1996, 13, 4-30.	0.7	80
26	The intrinsic time for the streamline upwind/Petrov-Galerkin formulation using quadratic elements. Computer Methods in Applied Mechanics and Engineering, 1992, 94, 239-262.	3.4	79
27	Continuum FE models for the analysis of Mallorca Cathedral. Engineering Structures, 2013, 46, 653-670.	2.6	79
28	A crack-tracking technique for localized damage in quasi-brittle materials. Engineering Fracture Mechanics, 2010, 77, 2431-2450.	2.0	74
29	Numerical modeling of the electron beam welding and its experimental validation. Finite Elements in Analysis and Design, 2016, 121, 118-133.	1.7	72
30	Enhanced friction model for Friction Stir Welding (FSW) analysis: Simulation and experimental validation. International Journal of Mechanical Sciences, 2017, 133, 555-567.	3.6	72
31	Thermo-Chemo-Mechanical Model for Concrete. II: Damage and Creep. Journal of Engineering Mechanics - ASCE, 1999, 125, 1028-1039.	1.6	69
32	DERIVATION OF THIN PLATE BENDING ELEMENTS WITH ONE DEGREE OF FREEDOM PER NODE: A SIMPLE THREE NODE TRIANGLE. Engineering Computations, 1993, 10, 543-561.	0.7	68
33	A fast and accurate two-stage strategy to evaluate the effect of the pin tool profile on metal flow, torque and forces in friction stir welding. International Journal of Mechanical Sciences, 2017, 122, 215-227.	3.6	65
34	Defect formation and material flow in Friction Stir Welding. European Journal of Mechanics, A/Solids, 2020, 80, 103912.	2.1	64
35	A stabilized formulation for incompressible plasticity using linear triangles and tetrahedra. International Journal of Plasticity, 2004, 20, 1487-1504.	4.1	62
36	An apropos kinematic framework for the numerical modeling of friction stir welding. Computers and Structures, 2013, 117, 48-57.	2.4	62

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37	In situ measurements and thermo-mechanical simulation of Tiâ€“6Alâ€“4V laser solid forming processes. International Journal of Mechanical Sciences, 2019, 153-154, 119-130.	3.6	62
38	On the formulation of coupled thermoplastic problems with phase-change. International Journal of Plasticity, 1999, 15, 1-34.	4.1	60
39	Antibiotic Prevention of Acute Exacerbations of COPD. New England Journal of Medicine, 2012, 367, 340-347.	13.9	59
40	Mixed stabilized finite element methods in nonlinear solid mechanics. Part III: Compressible and incompressible plasticity. Computer Methods in Applied Mechanics and Engineering, 2015, 285, 752-775.	3.4	58
41	Numerical analysis of stereolithography processes using the finite element method. Rapid Prototyping Journal, 1995, 1, 13-23.	1.6	57
42	A novel positive/negative projection in energy norm for the damage modeling of quasi-brittle solids. International Journal of Solids and Structures, 2018, 139-140, 250-269.	1.3	57
43	Effect of the Tool Tilt Angle on the Heat Generation and the Material Flow in Friction Stir Welding. Metals, 2019, 9, 28.	1.0	56
44	Shear band localization via local J2 continuum damage mechanics. Computer Methods in Applied Mechanics and Engineering, 2004, 193, 849-880.	3.4	52
45	Modeling of Microstructure Evolution of Ti6Al4V for Additive Manufacturing. Metals, 2018, 8, 633.	1.0	52
46	Nonlinear analysis of reinforced concrete plate and shell structures using 20-noded isoparametric brick elements. Computers and Structures, 1987, 25, 845-869.	2.4	51
47	Challenges in Thermo-mechanical Analysis of Friction Stir Welding Processes. Archives of Computational Methods in Engineering, 2017, 24, 189-225.	6.0	51
48	Mesh objective modeling of cracks using continuous linear strain and displacement interpolations. International Journal for Numerical Methods in Engineering, 2011, 87, 962-987.	1.5	50
49	On the orthogonal subgrid scale pressure stabilization of finite deformation J2 plasticity. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 1224-1251.	3.4	47
50	Material flow visualization in Friction Stir Welding via particle tracing. International Journal of Material Forming, 2015, 8, 167-181.	0.9	42
51	Thermo-mechanical analysis of industrial solidification processes. International Journal for Numerical Methods in Engineering, 1999, 46, 1575-1591.	1.5	41
52	Simulation of Construction of RCC Dams. I: Temperature and Aging. Journal of Structural Engineering, 2000, 126, 1053-1061.	1.7	41
53	On the equivalence between traction- and stress-based approaches for the modeling of localized failure in solids. Journal of the Mechanics and Physics of Solids, 2015, 82, 137-163.	2.3	39
54	Finite element modelling of internal and multiple localized cracks. Computational Mechanics, 2017, 59, 299-316.	2.2	39

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55	Substrate design to minimize residual stresses in Directed Energy Deposition AM processes. Materials and Design, 2021, 202, 109525.	3.3	39
56	A Comparative Review of XFEM, Mixed FEM and Phase-Field Models for Quasi-brittle Cracking. Archives of Computational Methods in Engineering, 2022, 29, 1009-1083.	6.0	39
57	Softening, localization and stabilization: capture of discontinuous solutions in J2 plasticity. International Journal for Numerical and Analytical Methods in Geomechanics, 2004, 28, 373-393.	1.7	37
58	Size effect and localization in J2 plasticity. International Journal of Solids and Structures, 2009, 46, 3301-3312.	1.3	36
59	Comparison of a Fluid and a Solid Approach for the Numerical Simulation of Friction Stir Welding with a Nonâ€Cylindrical Pin. Steel Research International, 2014, 85, 968-979.	1.0	36
60	A thermodynamically consistent plastic-damage framework for localized failure in quasi-brittle solids: Material model and strain localization analysis. International Journal of Solids and Structures, 2016, 88-89, 227-247.	1.3	36
61	Modeling Material Failure in Concrete Structures under Cyclic Actions. Journal of Structural Engineering, 2004, 130, 1997-2005.	1.7	35
62	A localized mapped damage model for orthotropic materials. Engineering Fracture Mechanics, 2014, 124-125, 196-216.	2.0	35
63	A crack-tracking technique for localized cohesiveâ€“frictional damage. Engineering Fracture Mechanics, 2015, 150, 96-114.	2.0	32
64	A mixed three-field FE formulation for stress accurate analysis including the incompressible limit. Computer Methods in Applied Mechanics and Engineering, 2015, 283, 1095-1116.	3.4	32
65	Finite element modeling of quasi-brittle cracks in 2D and 3D with enhanced strain accuracy. Computational Mechanics, 2017, 60, 767-796.	2.2	32
66	An Enhanced Finite Element Macro-Model for the Realistic Simulation of Localized Cracks in Masonry Structures: A Large-Scale Application. International Journal of Architectural Heritage, 2018, 12, 432-447.	1.7	31
67	Computational Modeling and Sub-Grid Scale Stabilization of Incompressibility and Convection in the Numerical Simulation of Friction Stir Welding Processes. Archives of Computational Methods in Engineering, 2014, 21, 3-37.	6.0	30
68	On the constitutive modeling of coupled thermomechanical phase-change problems. International Journal of Plasticity, 2001, 17, 1565-1622.	4.1	29
69	On the conformity of strong, regularized, embedded and smeared discontinuity approaches for the modeling of localized failure in solids. International Journal of Solids and Structures, 2015, 71, 19-38.	1.3	28
70	Tracking multi-directional intersecting cracks in numerical modelling of masonry shear walls under cyclic loading. Meccanica, 2018, 53, 1757-1776.	1.2	28
71	Prediction of joint line remnant defect in friction stir welding. International Journal of Mechanical Sciences, 2019, 151, 61-69.	3.6	27
72	Challenges, Tools and Applications of Tracking Algorithms in the Numerical Modelling of Cracks in Concrete and Masonry Structures. Archives of Computational Methods in Engineering, 2019, 26, 961-1005.	6.0	26

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73	Explicit mixed strain-displacement finite element for dynamic geometrically non-linear solid mechanics. Computational Mechanics, 2015, 55, 543-559.	2.2	25
74	Out-of-plane seismic response and failure mechanism of masonry structures using finite elements with enhanced strain accuracy. Engineering Failure Analysis, 2019, 97, 534-555.	1.8	25
75	Numerical modelling of heat transfer and experimental validation in powder-bed fusion with the virtual domain approximation. Finite Elements in Analysis and Design, 2020, 168, 103343.	1.7	25
76	Modelling of Bingham and Herschelâ€“Bulkley flows with mixed P1/P1 finite elements stabilized with orthogonal subgrid scale. Journal of Non-Newtonian Fluid Mechanics, 2016, 228, 1-16.	1.0	24
77	Warpage Analysis and Control of Thin-Walled Structures Manufactured by Laser Powder Bed Fusion. Metals, 2021, 11, 686.	1.0	24
78	3D numerical modelling of twisting cracks under bending and torsion of skew notched beams. Engineering Fracture Mechanics, 2017, 176, 235-256.	2.0	23
79	Structural size effect: Experimental, theoretical and accurate computational assessment. Engineering Structures, 2020, 213, 110555.	2.6	23
80	An adaptive Finite Element strategy for the numerical simulation of additive manufacturing processes. Additive Manufacturing, 2021, 37, 101650.	1.7	23
81	Simulation of Construction of RCC Dams. II: Stress and Damage. Journal of Structural Engineering, 2000, 126, 1062-1069.	1.7	21
82	Benchmarking on bifurcation and localization in J2 plasticity for plane stress and plane strain conditions. Computer Methods in Applied Mechanics and Engineering, 2012, 241-244, 206-224.	3.4	19
83	Localâ€“global strategy for the prediction of residual stresses in FSW processes. International Journal of Advanced Manufacturing Technology, 2017, 88, 3099-3111.	1.5	19
84	A smearedâ€embedded meshâ€corrected damage model for tensile cracking. International Journal for Numerical Methods in Engineering, 2008, 76, 1930-1954.	1.5	18
85	An orthotropic mesh corrected crack model. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 1603-1619.	3.4	18
86	On the Numerical Modeling of the Thermomechanical Contact for Metal Casting Analysis. Journal of Heat Transfer, 2008, 130, .	1.2	18
87	Numerical Modelling of Microstructure Evolution in Friction Stir Welding (FSW). Metals, 2018, 8, 183.	1.0	18
88	Numerical and experimental analysis of the structural performance of AM components built by fused filament fabrication. International Journal of Mechanics and Materials in Design, 2021, 17, 225-244.	1.7	18
89	High-fidelity prediction of crack formation in 2D and 3D pullout tests. Computers and Structures, 2016, 172, 93-109.	2.4	17
90	Analysis of the Effect of Provisional Ties on the Construction and Current Deformation of Mallorca Cathedral. International Journal of Architectural Heritage, 2016, 10, 418-437.	1.7	17

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91	Simulation-assisted investigation on the formation of layer bands and the microstructural evolution in directed energy deposition of Ti6Al4V blocks. Virtual and Physical Prototyping, 2021, 16, 387-403.	5.3	16
92	A Computational Model for the Numerical Simulation of FSW Processes. , 2010, , .		15
93	An Energy-Equivalent d+/dâ^' Damage Model with Enhanced Microcrack Closure-Reopening Capabilities for Cohesive-Frictional Materials. Materials, 2017, 10, 433.	1.3	15
94	Modeling of the Effect of the Building Strategy on the Thermomechanical Response of Ti-6Al-4V Rectangular Parts Manufactured by Laser Directed Energy Deposition. Metals, 2020, 10, 1643.	1.0	15
95	Experimental, Computational, and Dimensional Analysis of the Mechanical Performance of Fused Filament Fabrication Parts. Polymers, 2021, 13, 1766.	2.0	15
96	Failure pressure evaluation of the containment building of a large dry nuclear power plant. Nuclear Engineering and Design, 1998, 180, 251-270.	0.8	14
97	Stress-accurate Mixed FEM for soil failure under shallow foundations involving strain localization in plasticity. Computers and Geotechnics, 2015, 64, 32-47.	2.3	14
98	Stress, strain and dissipation accurate 3-field formulation for inelastic isochoric deformation. Finite Elements in Analysis and Design, 2021, 192, 103534.	1.7	13
99	Experimental Validation of an FSW Model with an Enhanced Friction Law: Application to a Threaded Cylindrical Pin Tool. Metals, 2017, 7, 491.	1.0	12
100	Cracking of quasi-brittle structures under monotonic and cyclic loadings: A d/d damage model with stiffness recovery in shear. International Journal of Solids and Structures, 2018, 135, 148-171.	1.3	12
101	Numerical Simulation and Visualization of Material Flow in Friction Stir Welding via Particle Tracing. Computational Methods in Applied Sciences (Springer), 2014, , 157-169.	0.1	12
102	Residual Stresses Control in Additive Manufacturing. Journal of Manufacturing and Materials Processing, 2021, 5, 138.	1.0	12
103	Strain Localization of Elastic-Damaging Frictional-Cohesive Materials: Analytical Results and Numerical Verification. Materials, 2017, 10, 434.	1.3	11
104	Mitigation of residual stresses and microstructure homogenization in directed energy deposition processes. Engineering With Computers, 2022, 38, 4771-4790.	3.5	11
105	A computational model for progressive cracking in large dams due to the swelling of concrete. Engineering Fracture Mechanics, 1990, 35, 573-585.	2.0	10
106	Explicit mixed strainâ€“displacement finite elements for compressible and quasi-incompressible elasticity and plasticity. Computational Mechanics, 2016, 58, 511-532.	2.2	9
107	Appraisement of planar, bending and twisting cracks in 3D with isotropic and orthotropic damage models. International Journal of Fracture, 2018, 210, 45-79.	1.1	9
108	Viscoelasticity and Damage Model for Creep Behavior of Historical Masonry Structures. Open Civil Engineering Journal, 2012, 6, 188-199.	0.4	9

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109	Strain localization analysis of Hillâ€™s orthotropic elastoplasticity: analytical results and numerical verification. Computational Mechanics, 2020, 65, 533-554.	2.2	8
110	A multi-criteria h-adaptive finite-element framework for industrial part-scale thermal analysis in additive manufacturing processes. Engineering With Computers, 2022, 38, 4791-4813.	3.5	8
111	3D numerical models of FSW processes with non-cylindrical pin. Advances in Materials and Processing Technologies, 2015, 1, 275-287.	0.8	7
112	3D numerical models using a fluid or a solid formulation of FSW processes with a non-cylindrical pin. Advanced Modeling and Simulation in Engineering Sciences, 2015, 2, .	0.7	7
113	Architecture of a multi-crack model with full closing, reopening and sliding capabilities. Computational Mechanics, 2020, 65, 1593-1620.	2.2	6
114	Computational characterization of polymeric materials 3D-printed via fused filament fabrication. Mechanics of Advanced Materials and Structures, 2023, 30, 1357-1367.	1.5	6
115	A penalty finite element method for non-Newtonian creeping flows. International Journal for Numerical Methods in Engineering, 1993, 36, 1395-1412.	1.5	5
116	Bond behavior and tensile properties of FRCM composites applied on masonry panels. , 2016, , 323-329.		5
117	Accurate thermal-induced structural failure analysis under incompressible conditions. Engineering Structures, 2022, 261, 114213.	2.6	5
118	A novel stress-accurate FE technology for highly non-linear analysis with incompressibility constraint. Application to the numerical simulation of the FSW process. , 2013, , .		4
119	Accurate and locking-free analysis of beams, plates and shells using solid elements. Computational Mechanics, 2021, 67, 883-914.	2.2	4
120	Strain Localization of Orthotropic Elastoâ€“Plastic Cohesiveâ€“Frictional Materials: Analytical Results and Numerical Verification. Materials, 2021, 14, 2040.	1.3	4
121	Preconditioned conjugate gradient method for the nonâ€linear finite element analysis with particular reference to 3D reinforced concrete structures. Engineering Computations, 1986, 3, 235-242.	0.7	3
122	Tracking of Localized Cracks in the Finite Element Analysis of Masonry Walls. RILEM Bookseries, 2019, , 919-928.	0.2	3
123	Modeling of spillage and debris floods as Newtonian and viscoplastic Bingham flows with free surface with mixed stabilized finite elements. Journal of Non-Newtonian Fluid Mechanics, 2021, 290, 104512.	1.0	3
124	A Phenomenological Model for the Solidification of Eutectic and Hypoeutectic Alloys Including Recalescence and Undercooling. Journal of Heat Transfer, 2018, 140, .	1.2	2
125	Lugares rurales versus espacios naturalizados. Conocimientos y reconocimientos en las lÃ³gicas patrimoniales de las Ã¡reas protegidas. AIBR Revista De Antropologia Iberoamericana, 2013, 08, 111-138.	0.2	2
126	On the mechanics of strain localization in plasticity: isotropic and orthotropic, elasto- and rigid-plastic, associated and non-associated models. Acta Mechanica, 2022, 233, 1513-1542.	1.1	2

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127	On site composites-to-masonry bond evaluation in presence of rising damp and salt crystallization. , 2016, , 365-372.		1
128	Numerical analysis of the manufacturing processes of a mock-up of the ITER NHF First Wall Panel. Fusion Engineering and Design, 2018, 135, 65-73.	1.0	1
129	Current Developments on the Coupled Thermomechanical Computational Modeling of Metal Casting Processes. , 2006, , 247-247.		1
130	Effect of pier-spandrel geometry on the in-plane response of masonry structures. , 2016, , 339-346.		1