Ignacio Carol Vilarasau

List of Publications by Year
in descending order

64 papers	3,703 citations	126858 33 h-index	138417 58 g-index
65 all docs	65 docs citations	65 times ranked	1919 citing authors

#	Article	IF	Citations
1	Microplane Model M4 for Concrete. I: Formulation with Work-Conjugate Deviatoric Stress. Journal of Engineering Mechanics - ASCE, 2000, 126, 944-953.	1.6	241
2	Study of the Behavior of Concrete under Triaxial Compression. Journal of Engineering Mechanics - ASCE, 2002, 128, 156-163.	1.6	234
3	Normal/Shear Cracking Model: Application to Discrete Crack Analysis. Journal of Engineering Mechanics - ASCE, 1997, 123, 765-773.	1.6	211
4	Chemo-mechanical analysis of concrete cracking and degradation due to external sulfate attack: A meso-scale model. Cement and Concrete Composites, 2011, 33, 411-423.	4.6	189
5	Meso-structural study of concrete fracture using interface elements. I: numerical model and tensile behavior. Materials and Structures/Materiaux Et Constructions, 2008, 41, 583-599.	1.3	175
6	3D meso-structural analysis of concrete specimens under uniaxial tension. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 7182-7195.	3.4	171
7	Micromechanical analysis of quasiâ€brittle materials using fractureâ€based interface elements. International Journal for Numerical Methods in Engineering, 2001, 52, 193-215.	1.5	151
8	Damage and plasticity in microplane theory. International Journal of Solids and Structures, 1997, 34, 3807-3835.	1.3	149
9	On the formulation of anisotropic elastic degradation. I. Theory based on a pseudo-logarithmic damage tensor rate. International Journal of Solids and Structures, 2001, 38, 491-518.	1.3	143
10	Coupled HM analysis using zeroâ€thickness interface elements with double nodes. Part I: Theoretical model. International Journal for Numerical and Analytical Methods in Geomechanics, 2008, 32, 2083-2101.	1.7	127
11	An interface element formulation for the analysis of soil-reinforcement interaction. Computers and Geotechnics, 1989, 7, 133-151.	2.3	111
12	A unified theory of elastic degradation and damage based on a loading surface. International Journal of Solids and Structures, 1994, 31, 2835-2865.	1.3	109
13	A thermodynamically consistent approach to microplane theory. Part I. Free energy and consistent microplane stresses. International Journal of Solids and Structures, 2001, 38, 2921-2931.	1.3	92
14	Viscoelasticity with Aging Caused by Solidification of Nonaging Constituent. Journal of Engineering Mechanics - ASCE, 1993, 119, 2252-2269.	1.6	88
15	Meso-structural study of concrete fracture using interface elements. II: compression, biaxial and Brazilian test. Materials and Structures/Materiaux Et Constructions, 2008, 41, 601-620.	1.3	85
16	On zero-thickness interface elements for diffusion problems. International Journal for Numerical and Analytical Methods in Geomechanics, 2004, 28, 947-962.	1.7	84
17	A constitutive model for rock joints formulation and numerical implementation. Computers and Geotechnics, 1990, 9, 3-20.	2.3	81
18	Spurious energy dissipation/generation in stiffness recovery models for elastic degradation and damage. International Journal of Solids and Structures, 1996, 33, 2939-2957.	1.3	78

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19	Large-Strain Generalization of Microplane Model for Concrete and Application. Journal of Engineering Mechanics - ASCE, 2000, 126, 971-980.	1.6	75
20	New explicit microplane model for concrete: Theoretical aspects and numerical implementation. International Journal of Solids and Structures, 1992, 29, 1173-1191.	1.3	72
21	Modeling of drying shrinkage of concrete specimens at the meso-level. Materials and Structures/Materiaux Et Constructions, 2011, 44, 415-435.	1.3	66
22	Localization Analysis of Elastic Degradation with Application to Scalar Damage. Journal of Engineering Mechanics - ASCE, 1995, 121, 541-554.	1.6	64
23	On the formulation of anisotropic elastic degradation.. International Journal of Solids and Structures, 2001, 38, 519-546.	1.3	63
24	Consistent tangent formulation for 3D interface modeling of cracking/fracture in quasi-brittle materials. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 2804-2822.	3.4	59
25	Coupled HM analysis using zero‐thickness interface elements with double nodes—Part II: Verification and application. International Journal for Numerical and Analytical Methods in Geomechanics, 2008, 32, 2103-2123.	1.7	57
26	A meso-level approach to the 3D numerical analysis of cracking and fracture of concrete materials. Fatigue and Fracture of Engineering Materials and Structures, 2006, 29, 979-991.	1.7	53
27	A thermodynamically consistent approach to microplane theory. Part II. Dissipation and inelastic constitutive modeling. International Journal of Solids and Structures, 2001, 38, 2933-2952.	1.3	50
28	Geometric Damage Tensor Based on Microplane Model. Journal of Engineering Mechanics - ASCE, 1991, 117, 2429-2448.	1.6	48
29	A framework for microplane models at large strain, with application to hyperelasticity. International Journal of Solids and Structures, 2004, 41, 511-557.	1.3	46
30	A framework for geometrically nonlinear continuum damage mechanics. International Journal of Engineering Science, 1998, 36, 1793-1814.	2.7	44
31	Nonlinear time-dependent analysis of planar frames using an 'exact' formulation—I. Theory. Computers and Structures, 1989, 33, 79-87.	2.4	41
32	Numerical modelling of pressurized fracture evolution in concrete using zero-thickness interface elements. Engineering Fracture Mechanics, 2010, 77, 1386-1399.	2.0	37
33	3D meso‐mechanical analysis of concrete specimens under biaxial loading. Fatigue and Fracture of Engineering Materials and Structures, 2007, 30, 877-886.	1.7	36
34	ASR expansions in concrete under triaxial confinement. Cement and Concrete Composites, 2018, 86, 160-170.	4.6	35
35	Hyperelastic Anisotropic Microplane Constitutive Model for Annulus Fibrosus. Journal of Biomechanical Engineering, 2007, 129, 632-641.	0.6	33
36	Microplane Constitutive Model and Computational Framework for Blood Vessel Tissue. Journal of Biomechanical Engineering, 2006, 128, 419-427.	0.6	32

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37	Analysis of mixed-mode fracture in concrete using interface elements and a cohesive crack model. Sadhana - Academy Proceedings in Engineering Sciences, 2012, 37, 187-205.	0.8	31
38	Viscoplastic approach for rate-dependent failure analysis of concrete joints and interfaces. International Journal of Solids and Structures, 2008, 45, 2686-2705.	1.3	29
39	An 'extended' volumetric/deviatoric formulation of anisotropic damage based on a pseudo-log rate. European Journal of Mechanics, A/Solids, 2002, 21, 747-772.	2.1	27
40	Crack opening conditions at 'corner nodes' in FE analysis with cracking along mesh lines. Engineering Fracture Mechanics, 2007, 74, 1963-1982.	2.0	27
41	On inter-element forces in the FEM-displacement formulation, and implications for stress recovery. International Journal for Numerical Methods in Engineering, 2006, 66, 502-528.	1.5	21
42	Modelling acid attack of oilwell cement exposed to carbonated brine. International Journal of Greenhouse Gas Control, 2018, 68, 191-202.	2.3	16
43	A Formulation of Anisotropic Elastic Damage Using Compact Tensor Formalism. Journal of Elasticity, 2001, 64, 85-109.	0.9	15
44	Micromechanical analysis of sand production. International Journal for Numerical and Analytical Methods in Geomechanics, 2019, 43, 1207-1229.	1.7	15
45	Discussions over MECA project results. Revue Européenne De Génie Civil, 2003, 7, 543-581.	0.0	14
46	Model for alkali-silica reaction expansions in concrete using zero-thickness chemo-mechanical interface elements. International Journal of Solids and Structures, 2020, 207, 145-177.	1.3	13
47	Nonlinear time-dependent analysis of planar frames using an 'exact' formulation—II. Computer implementation for R.C. structures and examples. Computers and Structures, 1989, 33, 89-102.	2.4	12
48	Fifth RILEM International Symposium on Creep and Shrinkage of Concrete (ConCreep-5). Materiaux Et Constructions, 1994, 27, 370-372.	0.3	8
49	Evaluation of safety factors in discontinuous rock. International Journal of Rock Mechanics and Mining Sciences, 1996, 33, 513-537.	0.3	8
50	A method for the calculation of inter-element stresses in 3D. Computer Methods in Applied Mechanics and Engineering, 2013, 254, 222-237.	3.4	8
51	Application of zero-thickness interface elements to sanding prediction analysis. Journal of Petroleum Science and Engineering, 2020, 190, 107052.	2.1	8
52	Optimal penalty stiffness values of concurrent 2D elastic interface elements leading to accurate stress tractions. International Journal for Numerical Methods in Engineering, 2014, 98, 344-370.	1.5	7
53	Foundation analysis of an arch dam. Comparison of two modelling techniques: No tension and jointed rock material. Rock Mechanics and Rock Engineering, 1985, 18, 149-182.	2.6	5
54	Dual orthotropic damage—effect tensors with complementary structures. International Journal of Engineering Science, 2003, 41, 1445-1495.	2.7	2

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55	XFEM formulation with sub‐interpolation, and equivalence to zero‐thickness interface elements. International Journal for Numerical and Analytical Methods in Geomechanics, 2019, 43, 45-76.	1.7	2
56	3D zero-thickness interface model for fracture of cement-based materials with chemical degradation. International Journal of Solids and Structures, 2022, 238, 111379.	1.3	2
57	Discussion on the paper: Application of some anisotropic damage model to the prediction of failure of some complex industrial concrete structure [Pierre Badel, Vincent Godard, Jean-Baptiste Leblond, Int. J. Solids Struct. 44 (2007), 5848–5874]. International Journal of Solids and Structures, 2008, 45, 4600-4602.	1.3	1
58	Recent Developments in Durability Mesomechanics of Concrete, Including Cracking via Interface Elements. , 2013, , .		1
59	Displacement‐based and hybrid formulations of zero‐thickness mortar/interface elements for unmatched meshes, with application to fracture mechanics. International Journal for Numerical Methods in Engineering, 2021, 122, 796-822.	1.5	1
60	Title is missing!. International Journal of Engineering Science, 2003, 41, vii-x.	2.7	0
61	CMAME Special Issue on Computational Concrete Mechanics. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 7075-7076.	3.4	0
62	Multiaxial behavior of concrete. Revue EuropÃ©enne De GÃ©nie Civil, 2007, 11, 907-926.	0.0	0
63	A coupled approach for the simulation of hydro-mechanical fracturing in porous rocks. , 2006, , 249-253.		0
64	Cracking and Fracture of Concrete at Meso-level using Zero-thickness Interface Elements. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2011, , 51-97.	0.3	0