David Benavente

List of Publications by Year
in descending order

127 papers	4,231 citations	101543 36 h-index	123424 61 g-index
136 all docs	136 docs citations	136 times ranked	2809 citing authors

#	Article	IF	Citations
1	Durability estimation of porous building stones from pore structure and strength. Engineering Geology, 2004, 74, 113-127.	6.3	229
2	Non-linear decay of building stones during freezeâ€“thaw weathering processes. Construction and Building Materials, 2013, 38, 443-454.	7.2	172
3	Role of pore structure in salt crystallisation in unsaturated porous stone. Journal of Crystal Growth, 2004, 260, 532-544.	1.5	159
4	Predicting the Capillary Imbibition of Porous Rocks from Microstructure. Transport in Porous Media, 2002, 49, 59-76.	2.6	156
5	Salt crystallization in pores: quantification and estimation of damage. Environmental Geology, 2007, 52, 205-213.	1.2	142
6	The influence of petrophysical properties on the salt weathering of porous building rocks. Environmental Geology, 2007, 52, 215-224.	1.2	137
7	Quantification of salt weathering in porous stones using an experimental continuous partial immersion method. Engineering Geology, 2001, 59, 313-325.	6.3	122
8	Paleolithic Art in Peril: Policy and Science Collide at Altamira Cave. Science, 2011, 334, 42-43.	12.6	120
9	A commented translation of the paper by C.W. Correns and W. Steinborn on crystallization pressure. Environmental Geology, 2007, 52, 187-203.	1.2	118
10	Weathering of limestone building material by mixed sulfate solutions. Characterization of stone microstructure, reaction products and decay forms. Materials Characterization, 2008, 59, 1371-1385.	4.4	112
11	Influence of surface roughness on color changes in building stones. Color Research and Application, 2003, 28, 343-351.	1.6	98
12	Climatology of salt transitions and implications for stone weathering. Science of the Total Environment, 2011, 409, 2577-2585.	8.0	98
13	Improved correlation between the static and dynamic elastic modulus of different types of rocks. Materials and Structures/Materiaux Et Constructions, 2016, 49, 3021-3037.	3.1	90
14	Sedimentary structures and physical properties of travertine and carbonate tufa building stone. Construction and Building Materials, 2012, 28, 456-467.	7.2	89
15	Comparison of the static and dynamic elastic modulus in carbonate rocks. Bulletin of Engineering Geology and the Environment, 2012, 71, 263-268.	3.5	88
16	Salt weathering in dual-porosity building dolostones. Engineering Geology, 2007, 94, 215-226.	6.3	84
17	Thermodynamic modelling of changes induced by salt pressure crystallisation in porous media of stone. Journal of Crystal Growth, 1999, 204, 168-178.	1.5	82
18	Modification of the porous network by salt crystallization in experimentally weathered sedimentary stones. Materials and Structures/Materiaux Et Constructions, 2008, 41, 1091-1108.	3.1	82

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19	Spatial attenuation: The most sensitive ultrasonic parameter for detecting petrographic features and decay processes in carbonate rocks. Engineering Geology, 2011, 119, 84-95.	6.3	81
20	Short-term CO2(g) exchange between a shallow karstic cavity and the external atmosphere during summer: Role of the surface soil layer. Atmospheric Environment, 2011, 45, 1418-1427.	4.1	79
21	Swelling damage in clay-rich sandstones used in the church of San Mateo in Tarifa (Spain). Journal of Cultural Heritage, 2008, 9, 66-76.	3.3	77
22	Deterioration of building materials in Roman catacombs: The influence of visitors. Science of the Total Environment, 2005, 349, 260-276.	8.0	75
23	The combined influence of mineralogical, hygric and thermal properties on the durability of porous building stones. European Journal of Mineralogy, 2008, 20, 673-685.	1.3	72
24	Predicting water permeability in sedimentary rocks from capillary imbibition and pore structure. Engineering Geology, 2015, 195, 301-311.	6.3	63
25	Soluble salt minerals from pigeon droppings as potential contributors to the decay of stone based Cultural Heritage. European Journal of Mineralogy, 2004, 16, 505-509.	1.3	55
26	Salt damage and microclimate in the Postumius Tomb, Roman Necropolis of Carmona, Spain. Environmental Earth Sciences, 2011, 63, 1529-1543.	2.7	53
27	Evolution of surface properties of ornamental granitoids exposed to high temperatures. Construction and Building Materials, 2016, 104, 263-275.	7.2	52
28	Rock fabric, pore geometry and mineralogy effects on water transport in fractured dolostones. Engineering Geology, 2009, 107, 1-15.	6.3	44
29	Main drivers of diffusive and advective processes of CO2-gas exchange between a shallow vadose zone and the atmosphere. International Journal of Greenhouse Gas Control, 2014, 21, 113-129.	4.6	44
30	Treatment of rising damp and salt decay: the historic masonry buildings of Adelaide, South Australia. Materials and Structures/Materiaux Et Constructions, 2009, 42, 827-848.	3.1	43
31	Subterranean atmospheres may act as daily methane sinks. Nature Communications, 2015, 6, 7003.	12.8	42
32	Deterioration of dolostone by magnesium sulphate salt: An example of incompatible building materials at Bonaval Monastery, Spain. Construction and Building Materials, 2009, 23, 846-855.	7.2	41
33	Ultrasonic pulse velocity as a way of improving uniaxial compressive strength estimations from Leeb hardness measurements. Construction and Building Materials, 2020, 261, 119996.	7.2	41
34	Electrochemical water softening: Influence of water composition on the precipitation behaviour. Separation and Purification Technology, 2019, 211, 857-865.	7.9	40
35	Petrographic quantification of brecciated rocks by image analysis. Application to the interpretation of elastic wave velocities. Engineering Geology, 2007, 90, 41-54.	6.3	38
36	Characterization of trace gases' fluctuations on a â€˜low energyâ€™ cave (CastaÃ±ar de Ãbor, Spain) using techniques of entropy of curves. International Journal of Climatology, 2011, 31, 127-143.	3.5	38

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37	Impact of salt and frost weathering on the physical and durability properties of travertines and carbonate tufas used as building material. Environmental Earth Sciences, 2018, 77, 1.	2.7	38
38	Ultrasonic and X-ray computed tomography characterization of progressive fracture damage in low-porous carbonate rocks. Engineering Geology, 2016, 200, 47-57.	6.3	36
39	Gypsum crust as a source of calcium for the consolidation of carbonate stones using a calcium phosphate-based consolidant. Construction and Building Materials, 2017, 143, 298-311.	7.2	36
40	Role of soil pore structure in water infiltration and CO2 exchange between the atmosphere and underground air in the vadose zone: A combined laboratory and field approach. Catena, 2017, 149, 402-416.	5.0	36
41	Electrochemical softening of concentrates from an electrodialysis brackish water desalination plant: Efficiency enhancement using a three-dimensional cathode. Separation and Purification Technology, 2019, 208, 217-226.	7.9	36
42	Influence of Microstructure on The Resistance to Salt Crystallisation Damage in Brick. Materials and Structures/Materiaux Et Constructions, 2007, 39, 105-113.	3.1	31
43	Infrared thermography monitoring of the NaCl crystallisation process. Infrared Physics and Technology, 2015, 71, 198-207.	2.9	30
44	Salt influence on evaporation from porous building rocks. Construction and Building Materials, 2003, 17, 113-122.	7.2	29
45	Assessment of the strength of building rocks using signal processing procedures. Construction and Building Materials, 2006, 20, 562-568.	7.2	29
46	Recolonization of mortars by endolithic organisms on the walls of San Roque church in Campeche (Mexico): A case of tertiary bioreceptivity. Construction and Building Materials, 2014, 53, 348-359.	7.2	27
47	A GIS-based methodology to quantitatively define an Adjacent Protected Area in a shallow karst cavity: The case of Altamira cave. Journal of Environmental Management, 2013, 118, 122-134.	7.8	25
48	The influence of rock fabric in the durability of two sandstones used in the Andalusian Architectural Heritage (Montoro and Ronda, Spain). Engineering Geology, 2015, 197, 67-81.	6.3	25
49	Thermodynamic calculations for the salt crystallisation damage in porous built heritage using PHREEQC. Environmental Earth Sciences, 2015, 74, 2297-2313.	2.7	25
50	Multivariate statistical techniques for evaluating the effects of brecciated rock fabric on ultrasonic wave propagation. International Journal of Rock Mechanics and Minings Sciences, 2008, 45, 609-620.	5.8	22
51	Changes in the CO2 dynamics in near-surface cavities under a future warming scenario: Factors and evidence from the field and experimental findings. Science of the Total Environment, 2016, 565, 1151-1164.	8.0	22
52	Statistical and experimental study for determining the influence of the segregation phenomenon on physical and mechanical properties of lightweight concrete. Construction and Building Materials, 2020, 238, 117642.	7.2	22
53	Stone weathering under Mediterranean semiarid climate in the fortress of Nueva Tabarca island (Spain). Building and Environment, 2017, 121, 262-276.	6.9	21
54	Thermal effect of high temperatures on the physical and mechanical properties of a granite used in UNESCO World Heritage sites in north Portugal. Journal of Building Engineering, 2021, 43, 102823.	3.4	20

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55	Weathering Processes and Mechanisms Caused by Capillary Waters and Pigeon Droppings on Porous Limestones. Minerals (Basel, Switzerland), 2021, 11, 18.	2.0	20
56	Role of subterranean microbiota in the carbon cycle and greenhouse gas dynamics. Science of the Total Environment, 2022, 831, 154921.	8.0	19
57	Experimental definition of microclimatic conditions based on water transfer and porous media properties for the conservation of prehistoric constructions: Cueva Pintada at Galdar, Gran Canaria, Spain. Environmental Geology, 2009, 56, 1495.	1.2	18
58	Effect of water vapour condensation on the radon content in subsurface air in a hypogeal inactive-volcanic environment in Galdar cave, Spain. Atmospheric Environment, 2013, 75, 15-23.	4.1	18
59	Influence of the petrophysical and durability properties of carbonate rocks on the deterioration of historic constructions in Tebessa (northeastern Algeria). Bulletin of Engineering Geology and the Environment, 2019, 78, 3969-3981.	3.5	18
60	Mechanical Evolution of Lime Mortars during the Carbonation Process. Key Engineering Materials, 0, 465, 483-486.	0.4	17
61	Composition, uses, provenance and stability of rocks and ancient mortars in a Theban Tomb in Luxor (Egypt). Materials and Structures/Materiaux Et Constructions, 2016, 49, 941-960.	3.1	17
62	Effect of pore structure and moisture content on gas diffusion and permeability in porous building stones. Materials and Structures/Materiaux Et Constructions, 2018, 51, 1.	3.1	17
63	Changes in the storage and sink of carbon dioxide in subsurface atmospheres controlled by climate-driven processes: the case of the Ojo GuareÃ±a karst system. Environmental Earth Sciences, 2015, 74, 7715-7730.	2.7	16
64	Abiotic and seasonal control of soil-produced CO2 efflux in karstic ecosystems located in Oceanic and Mediterranean climates. Atmospheric Environment, 2017, 164, 31-49.	4.1	16
65	Influence of microstructure on fluid transport and mechanical properties in structural concrete produced with lightweight clay aggregates. Construction and Building Materials, 2018, 171, 388-396.	7.2	16
66	Estimation of soil gas permeability for assessing radon risk using Rosetta pedotransfer function based on soil texture and water content. Journal of Environmental Radioactivity, 2019, 208-209, 105992.	1.7	16
67	Comparative analysis of water condensate porosity using mercury intrusion porosimetry and nitrogen and water adsorption techniques in porous building stones. Construction and Building Materials, 2021, 288, 123131.	7.2	16
68	Peroxodisulfate as a chemical initiator for methacrylateâ€ester monolithic columns for capillary electrochromatography. Electrophoresis, 2008, 29, 910-918.	2.4	15
69	EnvironmentalWaveletTool: Continuous and discrete wavelet analysis and filtering for environmental time series. Computer Physics Communications, 2014, 185, 2758-2770.	7.5	15
70	Improving uniaxial compressive strength estimation of carbonate sedimentary rocks by combining minimally invasive and non-destructive techniques. International Journal of Rock Mechanics and Minings Sciences, 2021, 147, 104915.	5.8	14
71	Experimental investigation of the effect of quenching cycles on the physico-chemical properties of granites. Geothermics, 2021, 97, 102235.	3.4	13
72	Analysis of potential direct insolation as a degradation factor of cave paintings in Villar del Humo, Cuenca, Central Spain. Geoarchaeology - an International Journal, 2009, 24, 450-465.	1.5	12

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73	Proposing a New Method Based on Image Analysis to Estimate the Segregation Index of Lightweight Aggregate Concretes. Materials, 2019, 12, 3642.	2.9	12
74	Assessment of CO2 dynamics in subsurface atmospheres using the wavelet approach: from cavityâ€“atmosphere exchange to anthropogenic impacts in Rull cave (Vall dâ€²Ebo, Spain). Environmental Earth Sciences, 2016, 75, 1.	2.7	11
75	Automatic detection and characterisation of the first P- and S-wave pulse in rocks using ultrasonic transmission method. Engineering Geology, 2020, 266, 105474.	6.3	11
76	Dissolution of Rock During Smart Water Injection in Heavy Oil Carbonate Reservoirs by Natural Generation of Acidic Water. Energy & Fuels, 2017, 31, 11852-11865.	5.1	11
77	A comparison of experimental methods for measuring water permeability of porous building rocks. Materiales De Construccion, 2014, 64, e028.	0.7	11
78	A study on the state of conservation of the Roman Necropolis of Carmona (Sevilla, Spain). Journal of Cultural Heritage, 2018, 34, 185-197.	3.3	10
79	Insights on Climate-Driven Fluctuations of Cave ²²²Rn and CO₂ Concentrations Using Statistical and Wavelet Analyses. Geofluids, 2020, 2020, 1-17.	0.7	10
80	Mineralogical Transformations in Granitoids during Heating at Fire-Related Temperatures. Applied Sciences (Switzerland), 2022, 12, 188.	2.5	10
81	The water balance equations in saline playa lakes: comparison between experimental and recent data from Quero Playa Lake (central Spain). Sedimentary Geology, 2002, 148, 221-234.	2.1	9
82	Comparison of UV-IR radioluminescence and cathodoluminescence spectra of a potassium feldspar. Radiation Measurements, 2007, 42, 780-783.	1.4	9
83	The deterioration of Circular Mausoleum, Roman Necropolis of Carmona, Spain. Science of the Total Environment, 2015, 518-519, 65-77.	8.0	9
84	Temperature-Induced Explosive Behaviour and Thermo-Chemical Damage on Pyrite-Bearing Limestones: Causes and Mechanisms. Rock Mechanics and Rock Engineering, 2021, 54, 219-234.	5.4	8
85	Effectiveness of two lightweight aggregates for the removal of heavy metals from contaminated urban stormwater. Journal of Contaminant Hydrology, 2021, 239, 103778.	3.3	8
86	Estudio de la fluencia de una calcarenita: la Piedra de San JuliÃ¡n (Alicante). Materiales De Construccion, 2013, 63, 581-595.	0.7	8
87	Estimation of uniaxial compressive strength and intrinsic permeability from ultrasounds in sedimentary stones used as heritage building materials. Journal of Cultural Heritage, 2022, 55, 346-355.	3.3	8
88	Sodium sulfate crystallisation monitoring using IR thermography. Infrared Physics and Technology, 2018, 89, 231-241.	2.9	7
89	Remediation by waste marble powder and lime of jarosite-rich sediments from Portman Bay (Spain). Environmental Pollution, 2020, 264, 114786.	7.5	7
90	Phosphor plasters of on the courtyard wall of Djehuty's tomb (Luxor, Egypt). Radiation Measurements, 2008, 43, 849-853.	1.4	6

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91	Global models for 222Rn and CO2 concentrations in the Cave of Altamira. Theoretical and Applied Climatology, 2021, 143, 603-626.	2.8	6
92	The Role of Calcite Dissolution and Halite Thermal Expansion as Secondary Salt Weathering Mechanisms of Calcite-Bearing Rocks in Marine Environments. Minerals (Basel, Switzerland), 2021, 11, 911.	2.0	6
93	Composition, Luminescence, and Color of a Natural Blue Calcium Carbonate from Madagascar. Spectroscopy Letters, 2015, 48, 107-111.	1.0	5
94	Changes on the surface properties of foliated marbles at different cutting orientations. Construction and Building Materials, 2019, 222, 493-499.	7.2	5
95	Geogymkhana-Alicante (Spain): Geoheritage Through Education. Geoheritage, 2020, 12, 1.	2.8	5
96	Impact of marble powder amendment on hydraulic properties of a sandy soil. International Agrophysics, 2020, 34, 223-232.	1.7	5
97	Estudio del efecto de los acabados superficiales en granitos y calizas para su aplicaciÃ³n en pavimentos exteriores de baldosas de piedra. Materiales De Construccion, 2008, 58, .	0.7	5
98	Estimation of the Radon Risk Under Different European Climates and Soil Textures. Frontiers in Public Health, 2022, 10, 794557.	2.7	5
99	Durability Improvement of Ancient Bricks by Cementation of Porous Media. Journal of the American Ceramic Society, 2005, 88, 2564-2572.	3.8	4
100	Petrophysical properties, composition and deterioration of the Calatorao biogenic stone: case of the sculptures masonry of the Valley of the Fallen (Madrid, Spain). Environmental Earth Sciences, 2013, 69, 1733-1750.	2.7	4
101	14. Scientific Data Suggest Altamira Cave Should Remain Closed. , 2015, , 303-320.		4
102	Predicting Daily Water Table Fluctuations in Karstic Aquifers from GIS-Based Modelling, Climatic Settings and Extraction Wells. Water Resources Management, 2016, 30, 2531-2545.	3.9	4
103	Colour changes by laser irradiation of reddish building limestones. Applied Surface Science, 2016, 384, 525-529.	6.1	4
104	Effect of Ventilation on Karst System Equilibrium (Altamira Cave, N Spain): an Appraisal of Karst Contribution to the Global Carbon Cycle Balance. Environmental Earth Sciences, 2010, , 469-474.	0.2	4
105	Definition of Microclimatic Conditions in a Karst Cavity: Rull Cave (Alicante, Spain). , 2015, , 497-503.		4
106	Las calizas microcristalinas como material de construcciÃ³n: el caso del Gris Pulpis. Materiales De Construccion, 2005, 55, 5-24.	0.7	4
107	Investigating the geological and geomechanical characteristics governing the weathering behavior of Meymand tuff. Environmental Earth Sciences, 2022, 81, 1.	2.7	4
108	Natural Generation of Acidic Water as a Cause of Dissolution of the Rock During Smart Water Injection in Heavy Oil Carbonate Reservoirs. , 2016, , .		3

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109	Influence of Surface Finishes and a Calcium Phosphate-Based Consolidant on the Decay of Sedimentary Building Stones Due to Acid Attack. Frontiers in Materials, 2020, 7, .	2.4	3
110	Recovery of Polluted Urban Stormwater Containing Heavy Metals: Laboratory-Based Experiments with Arlita and Filtralite. Water (Switzerland), 2021, 13, 780.	2.7	3
111	Travertinos coloreados en la Cordillera BÃ©tica (SE de la PenÃnsula IbÃ©rica). SituaciÃ³n geolÃ³gica y caracterÃsticas petrofÃsicas. Boletin Geologico Y Minero, 2017, 128, 467-483.	0.1	3
112	RevisiÃ³n de los modelos hidrogeoquÃmicos de gÃ©nesis de tobas calcÃ¡reas. Estudios Geologicos, 2014, 70, e013.	0.2	3
113	Estudio preliminar de las caracterÃsticas petrogrÃ¡ficas, petrofÃsicas y comportamiento mecÃ¡nico de rocas naturales tipo â€œpiedra bogotanaâ€• y â€œmÃ¡rmol royal bronceâ€•utilizadas en construcciones patrimoniales y recientes en Colombia. Revista UIS IngenierÃas, 2019, 18, 203-222.	0.2	3
114	Digital 3D Rocks: A Collaborative Benchmark for Learning Rocks Recognition. Rock Mechanics and Rock Engineering, 2019, 52, 4799-4806.	5.4	2
115	Mechanical Characterisation of Ancient Egyptian Mortars. Key Engineering Materials, 0, 465, 487-490.	0.4	1
116	Mineral-Variations Study of Canelobre Cave Phosphate Stalactites by Raman and Luminescence Methods. Spectroscopy Letters, 2011, 44, 539-542.	1.0	1
117	Response to ENGEO7253 Discussion of: â€œPredicting water permeability in sedimentary rocks from capillary imbibition and pore structureâ€•by D. Benavente et al., Engineering Geology (2015) [doi: 10.1016/j.enggeo.2015.06.003]. Engineering Geology, 2016, 204, 123-125.	6.3	1
118	Mineral-Forming Processes at Canelobre Cave (Alicante, SE Spain). Environmental Earth Sciences, 2010, , 503-508.	0.2	1
119	The conservation of the Carmona Necropolis (Sevilla, Spain). , 2014, , 45-50.		1
120	AnÃ¡lisis de elementos traza en braquiÃ³podos del JurÃ¡sico Inferior del Paleomargen Sud-IbÃ©rico (SE de) Tj ETQq0 0 0 rgBT /Overlock ExtinciÃ³n Masiva del Toarciense inferior. Estudios Geologicos, 2021, 77, e141.	0.2	1
121	Mechanical Analysis of Multi-Textural Rocks (Brecciated Dolostones and Limestones): A New Micro-Compression Test for Rocks. Key Engineering Materials, 0, 465, 479-482.	0.4	0
122	Materiales de construcciÃ³n incompatibles dentro de las esculturas estereotÃ³micas de Avalos en el Valle de CaÃdos (Madrid, EspaÃ±a). Materiales De Construccion, 2013, 63, 117-129.	0.7	0
123	Climate-Driven Changes on Storage and Sink of Carbon Dioxide in Subsurface Atmosphere of Karst Terrains. , 2015, , 523-531.		0
124	KarsTS: an R package for microclimate time series analysis. Earth Science Informatics, 2019, 12, 685-697.	3.2	0
125	Geoâ€environmental evaluation for the preventive conservation of openâ€air archaeological sites: the case of the Roman Necropolis of Carmona (Spain). Archaeological Prospection, 2020, 27, 13-26.	2.2	0
126	Brucite-Aragonite Precipitates as Weathering Products of Historic Non-MgO-Based Geomaterials. Minerals (Basel, Switzerland), 2020, 10, 599.	2.0	0

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127	Mechanical characterization of the rocks involved in the AlbuÃ±uelas landslide (South Spain). , 2014, , 457-462.		0