

# David Benavente

## List of Publications by Year in descending order

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127  
papers

4,231  
citations

101543

36  
h-index

123424

61  
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136  
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136  
docs citations

136  
times ranked

2809  
citing authors

#	ARTICLE	IF	CITATIONS
1	Investigating the geological and geomechanical characteristics governing the weathering behavior of Meymand tuff. <i>Environmental Earth Sciences</i> , 2022, 81, 1.	2.7	4
2	Estimation of the Radon Risk Under Different European Climates and Soil Textures. <i>Frontiers in Public Health</i> , 2022, 10, 794557.	2.7	5
3	Role of subterranean microbiota in the carbon cycle and greenhouse gas dynamics. <i>Science of the Total Environment</i> , 2022, 831, 154921.	8.0	19
4	Mineralogical Transformations in Granitoids during Heating at Fire-Related Temperatures. <i>Applied Sciences (Switzerland)</i> , 2022, 12, 188.	2.5	10
5	Estimation of uniaxial compressive strength and intrinsic permeability from ultrasounds in sedimentary stones used as heritage building materials. <i>Journal of Cultural Heritage</i> , 2022, 55, 346-355.	3.3	8
6	Global models for $^{222}\text{Rn}$ and $\text{CO}_2$ concentrations in the Cave of Altamira. <i>Theoretical and Applied Climatology</i> , 2021, 143, 603-626.	2.8	6
7	Temperature-Induced Explosive Behaviour and Thermo-Chemical Damage on Pyrite-Bearing Limestones: Causes and Mechanisms. <i>Rock Mechanics and Rock Engineering</i> , 2021, 54, 219-234.	5.4	8
8	Recovery of Polluted Urban Stormwater Containing Heavy Metals: Laboratory-Based Experiments with Arlita and Filtralite. <i>Water (Switzerland)</i> , 2021, 13, 780.	2.7	3
9	Effectiveness of two lightweight aggregates for the removal of heavy metals from contaminated urban stormwater. <i>Journal of Contaminant Hydrology</i> , 2021, 239, 103778.	3.3	8
10	Comparative analysis of water condensate porosity using mercury intrusion porosimetry and nitrogen and water adsorption techniques in porous building stones. <i>Construction and Building Materials</i> , 2021, 288, 123131.	7.2	16
11	The Role of Calcite Dissolution and Halite Thermal Expansion as Secondary Salt Weathering Mechanisms of Calcite-Bearing Rocks in Marine Environments. <i>Minerals (Basel, Switzerland)</i> , 2021, 11, 911.	2.0	6
12	Thermal effect of high temperatures on the physical and mechanical properties of a granite used in UNESCO World Heritage sites in north Portugal. <i>Journal of Building Engineering</i> , 2021, 43, 102823.	3.4	20
13	Improving uniaxial compressive strength estimation of carbonate sedimentary rocks by combining minimally invasive and non-destructive techniques. <i>International Journal of Rock Mechanics and Minings Sciences</i> , 2021, 147, 104915.	5.8	14
14	Experimental investigation of the effect of quenching cycles on the physico-chemical properties of granites. <i>Geothermics</i> , 2021, 97, 102235.	3.4	13
15	Weathering Processes and Mechanisms Caused by Capillary Waters and Pigeon Droppings on Porous Limestones. <i>Minerals (Basel, Switzerland)</i> , 2021, 11, 18.	2.0	20
16	Análisis de elementos traza en braquiópodos del Jurásico Inferior del Paleomargen Sud-Ibérico (SE de Tj ETQq0 0 0 rgBT /Overlock Extinción Masiva del Toarciense inferior. <i>Estudios Geológicos</i> , 2021, 77, e141.	0.2	1
17	Automatic detection and characterisation of the first P- and S-wave pulse in rocks using ultrasonic transmission method. <i>Engineering Geology</i> , 2020, 266, 105474.	6.3	11
18	Environmental evaluation for the preventive conservation of open-air archaeological sites: the case of the Roman Necropolis of Carmona (Spain). <i>Archaeological Prospection</i> , 2020, 27, 13-26.	2.2	0

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19	Statistical and experimental study for determining the influence of the segregation phenomenon on physical and mechanical properties of lightweight concrete. <i>Construction and Building Materials</i> , 2020, 238, 117642.	7.2	22
20	Brucite-Aragonite Precipitates as Weathering Products of Historic Non-MgO-Based Geomaterials. <i>Minerals (Basel, Switzerland)</i> , 2020, 10, 599.	2.0	0
21	Insights on Climate-Driven Fluctuations of Cave $^{222}\text{Rn}$ and $\text{CO}_2$ Concentrations Using Statistical and Wavelet Analyses. <i>Geofluids</i> , 2020, 2020, 1-17.	0.7	10
22	Influence of Surface Finishes and a Calcium Phosphate-Based Consolidant on the Decay of Sedimentary Building Stones Due to Acid Attack. <i>Frontiers in Materials</i> , 2020, 7, .	2.4	3
23	Ultrasonic pulse velocity as a way of improving uniaxial compressive strength estimations from Leeb hardness measurements. <i>Construction and Building Materials</i> , 2020, 261, 119996.	7.2	41
24	Geogymkhana-Alicante (Spain): Geoheritage Through Education. <i>Geoheritage</i> , 2020, 12, 1.	2.8	5
25	Remediation by waste marble powder and lime of jarosite-rich sediments from Portman Bay (Spain). <i>Environmental Pollution</i> , 2020, 264, 114786.	7.5	7
26	Impact of marble powder amendment on hydraulic properties of a sandy soil. <i>International Agrophysics</i> , 2020, 34, 223-232.	1.7	5
27	KarsTS: an R package for microclimate time series analysis. <i>Earth Science Informatics</i> , 2019, 12, 685-697.	3.2	0
28	Changes on the surface properties of foliated marbles at different cutting orientations. <i>Construction and Building Materials</i> , 2019, 222, 493-499.	7.2	5
29	Estimation of soil gas permeability for assessing radon risk using Rosetta pedotransfer function based on soil texture and water content. <i>Journal of Environmental Radioactivity</i> , 2019, 208-209, 105992.	1.7	16
30	Digital 3D Rocks: A Collaborative Benchmark for Learning Rocks Recognition. <i>Rock Mechanics and Rock Engineering</i> , 2019, 52, 4799-4806.	5.4	2
31	Proposing a New Method Based on Image Analysis to Estimate the Segregation Index of Lightweight Aggregate Concretes. <i>Materials</i> , 2019, 12, 3642.	2.9	12
32	Electrochemical water softening: Influence of water composition on the precipitation behaviour. <i>Separation and Purification Technology</i> , 2019, 211, 857-865.	7.9	40
33	Influence of the petrophysical and durability properties of carbonate rocks on the deterioration of historic constructions in Tebessa (northeastern Algeria). <i>Bulletin of Engineering Geology and the Environment</i> , 2019, 78, 3969-3981.	3.5	18
34	Electrochemical softening of concentrates from an electrodialysis brackish water desalination plant: Efficiency enhancement using a three-dimensional cathode. <i>Separation and Purification Technology</i> , 2019, 208, 217-226.	7.9	36
35	Estudio preliminar de las características petrográficas, petrofísicas y comportamiento mecánico de rocas naturales tipo "piedra bogotana" y "mol royal bronce" utilizadas en construcciones patrimoniales y recientes en Colombia. <i>Revista UIS Ingenierías</i> , 2019, 18, 203-222.	0.2	3
36	Impact of salt and frost weathering on the physical and durability properties of travertines and carbonate tufas used as building material. <i>Environmental Earth Sciences</i> , 2018, 77, 1.	2.7	38

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37	Influence of microstructure on fluid transport and mechanical properties in structural concrete produced with lightweight clay aggregates. <i>Construction and Building Materials</i> , 2018, 171, 388-396.	7.2	16
38	A study on the state of conservation of the Roman Necropolis of Carmona (Sevilla, Spain). <i>Journal of Cultural Heritage</i> , 2018, 34, 185-197.	3.3	10
39	Effect of pore structure and moisture content on gas diffusion and permeability in porous building stones. <i>Materials and Structures/Materiaux Et Constructions</i> , 2018, 51, 1.	3.1	17
40	Sodium sulfate crystallisation monitoring using IR thermography. <i>Infrared Physics and Technology</i> , 2018, 89, 231-241.	2.9	7
41	Stone weathering under Mediterranean semiarid climate in the fortress of Nueva Tabarca island (Spain). <i>Building and Environment</i> , 2017, 121, 262-276.	6.9	21
42	Abiotic and seasonal control of soil-produced CO <sub>2</sub> efflux in karstic ecosystems located in Oceanic and Mediterranean climates. <i>Atmospheric Environment</i> , 2017, 164, 31-49.	4.1	16
43	Gypsum crust as a source of calcium for the consolidation of carbonate stones using a calcium phosphate-based consolidant. <i>Construction and Building Materials</i> , 2017, 143, 298-311.	7.2	36
44	Role of soil pore structure in water infiltration and CO <sub>2</sub> exchange between the atmosphere and underground air in the vadose zone: A combined laboratory and field approach. <i>Catena</i> , 2017, 149, 402-416.	5.0	36
45	Dissolution of Rock During Smart Water Injection in Heavy Oil Carbonate Reservoirs by Natural Generation of Acidic Water. <i>Energy &amp; Fuels</i> , 2017, 31, 11852-11865.	5.1	11
46	Travertinos coloreados en la Cordillera B�tica (SE de la Pen�nsula Ib�rica). Situaci�n geol�gica y caracter�sticas petrof�sicas. <i>Bolet�n Geol�gico Y Minero</i> , 2017, 128, 467-483.	0.1	3
47	Predicting Daily Water Table Fluctuations in Karstic Aquifers from GIS-Based Modelling, Climatic Settings and Extraction Wells. <i>Water Resources Management</i> , 2016, 30, 2531-2545.	3.9	4
48	Natural Generation of Acidic Water as a Cause of Dissolution of the Rock During Smart Water Injection in Heavy Oil Carbonate Reservoirs. , 2016, , .		3
49	Changes in the CO <sub>2</sub> dynamics in near-surface cavities under a future warming scenario: Factors and evidence from the field and experimental findings. <i>Science of the Total Environment</i> , 2016, 565, 1151-1164.	8.0	22
50	Colour changes by laser irradiation of reddish building limestones. <i>Applied Surface Science</i> , 2016, 384, 525-529.	6.1	4
51	Composition, uses, provenance and stability of rocks and ancient mortars in a Theban Tomb in Luxor (Egypt). <i>Materials and Structures/Materiaux Et Constructions</i> , 2016, 49, 941-960.	3.1	17
52	Ultrasonic and X-ray computed tomography characterization of progressive fracture damage in low-porous carbonate rocks. <i>Engineering Geology</i> , 2016, 200, 47-57.	6.3	36
53	Assessment of CO <sub>2</sub> dynamics in subsurface atmospheres using the wavelet approach: from cavity�atmosphere exchange to anthropogenic impacts in Rull cave (Vall d�Ebo, Spain). <i>Environmental Earth Sciences</i> , 2016, 75, 1.	2.7	11
54	Response to ENGEO7253 Discussion of: �Predicting water permeability in sedimentary rocks from capillary imbibition and pore structure�by D. Benavente et al., <i>Engineering Geology</i> (2015) [doi: 10.1016/j.enggeo.2015.06.003]. <i>Engineering Geology</i> , 2016, 204, 123-125.	6.3	1

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55	Evolution of surface properties of ornamental granitoids exposed to high temperatures. <i>Construction and Building Materials</i> , 2016, 104, 263-275.	7.2	52
56	Improved correlation between the static and dynamic elastic modulus of different types of rocks. <i>Materials and Structures/Materiaux Et Constructions</i> , 2016, 49, 3021-3037.	3.1	90
57	The influence of rock fabric in the durability of two sandstones used in the Andalusian Architectural Heritage (Montoro and Ronda, Spain). <i>Engineering Geology</i> , 2015, 197, 67-81.	6.3	25
58	Climate-Driven Changes on Storage and Sink of Carbon Dioxide in Subsurface Atmosphere of Karst Terrains. , 2015, , 523-531.		0
59	14. Scientific Data Suggest Altamira Cave Should Remain Closed. , 2015, , 303-320.		4
60	Composition, Luminescence, and Color of a Natural Blue Calcium Carbonate from Madagascar. <i>Spectroscopy Letters</i> , 2015, 48, 107-111.	1.0	5
61	Changes in the storage and sink of carbon dioxide in subsurface atmospheres controlled by climate-driven processes: the case of the Ojo Guareña karst system. <i>Environmental Earth Sciences</i> , 2015, 74, 7715-7730.	2.7	16
62	Predicting water permeability in sedimentary rocks from capillary imbibition and pore structure. <i>Engineering Geology</i> , 2015, 195, 301-311.	6.3	63
63	Subterranean atmospheres may act as daily methane sinks. <i>Nature Communications</i> , 2015, 6, 7003.	12.8	42
64	Thermodynamic calculations for the salt crystallisation damage in porous built heritage using PHREEQC. <i>Environmental Earth Sciences</i> , 2015, 74, 2297-2313.	2.7	25
65	The deterioration of Circular Mausoleum, Roman Necropolis of Carmona, Spain. <i>Science of the Total Environment</i> , 2015, 518-519, 65-77.	8.0	9
66	Infrared thermography monitoring of the NaCl crystallisation process. <i>Infrared Physics and Technology</i> , 2015, 71, 198-207.	2.9	30
67	Definition of Microclimatic Conditions in a Karst Cavity: Rull Cave (Alicante, Spain). , 2015, , 497-503.		4
68	Recolonization of mortars by endolithic organisms on the walls of San Roque church in Campeche (Mexico): A case of tertiary bioreceptivity. <i>Construction and Building Materials</i> , 2014, 53, 348-359.	7.2	27
69	Main drivers of diffusive and advective processes of CO <sub>2</sub> -gas exchange between a shallow vadose zone and the atmosphere. <i>International Journal of Greenhouse Gas Control</i> , 2014, 21, 113-129.	4.6	44
70	EnvironmentalWaveletTool: Continuous and discrete wavelet analysis and filtering for environmental time series. <i>Computer Physics Communications</i> , 2014, 185, 2758-2770.	7.5	15
71	The conservation of the Carmona Necropolis (Sevilla, Spain). , 2014, , 45-50.		1
72	Revisión de los modelos hidrogeoquímicos de génesis de tobas calcáreas. <i>Estudios Geológicos</i> , 2014, 70, e013.	0.2	3

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73	A comparison of experimental methods for measuring water permeability of porous building rocks. <i>Materiales De Construccion</i> , 2014, 64, e028.	0.7	11
74	Mechanical characterization of the rocks involved in the Albuñuelas landslide (South Spain). , 2014, , 457-462.		0
75	Petrophysical properties, composition and deterioration of the Calatorao biogenic stone: case of the sculptures masonry of the Valley of the Fallen (Madrid, Spain). <i>Environmental Earth Sciences</i> , 2013, 69, 1733-1750.	2.7	4
76	A GIS-based methodology to quantitatively define an Adjacent Protected Area in a shallow karst cavity: The case of Altamira cave. <i>Journal of Environmental Management</i> , 2013, 118, 122-134.	7.8	25
77	Materiales de construcción incompatibles dentro de las esculturas estereotómicas de Avalos en el Valle de Cañados (Madrid, España). <i>Materiales De Construccion</i> , 2013, 63, 117-129.	0.7	0
78	Effect of water vapour condensation on the radon content in subsurface air in a hypogean inactive-volcanic environment in Galdar cave, Spain. <i>Atmospheric Environment</i> , 2013, 75, 15-23.	4.1	18
79	Non-linear decay of building stones during freeze-thaw weathering processes. <i>Construction and Building Materials</i> , 2013, 38, 443-454.	7.2	172
80	Estudio de la fluencia de una calcarenita: la Piedra de San Julián (Alicante). <i>Materiales De Construccion</i> , 2013, 63, 581-595.	0.7	8
81	Comparison of the static and dynamic elastic modulus in carbonate rocks. <i>Bulletin of Engineering Geology and the Environment</i> , 2012, 71, 263-268.	3.5	88
82	Sedimentary structures and physical properties of travertine and carbonate tufa building stone. <i>Construction and Building Materials</i> , 2012, 28, 456-467.	7.2	89
83	Climatology of salt transitions and implications for stone weathering. <i>Science of the Total Environment</i> , 2011, 409, 2577-2585.	8.0	98
84	Short-term CO <sub>2</sub> (g) exchange between a shallow karstic cavity and the external atmosphere during summer: Role of the surface soil layer. <i>Atmospheric Environment</i> , 2011, 45, 1418-1427.	4.1	79
85	Salt damage and microclimate in the Postumius Tomb, Roman Necropolis of Carmona, Spain. <i>Environmental Earth Sciences</i> , 2011, 63, 1529-1543.	2.7	53
86	Characterization of trace gases' fluctuations on a "low energy" cave (Castañar de Ábor, Spain) using techniques of entropy of curves. <i>International Journal of Climatology</i> , 2011, 31, 127-143.	3.5	38
87	Spatial attenuation: The most sensitive ultrasonic parameter for detecting petrographic features and decay processes in carbonate rocks. <i>Engineering Geology</i> , 2011, 119, 84-95.	6.3	81
88	Paleolithic Art in Peril: Policy and Science Collide at Altamira Cave. <i>Science</i> , 2011, 334, 42-43.	12.6	120
89	Mineral-Variations Study of Canelobre Cave Phosphate Stalactites by Raman and Luminescence Methods. <i>Spectroscopy Letters</i> , 2011, 44, 539-542.	1.0	1
90	Effect of Ventilation on Karst System Equilibrium (Altamira Cave, N Spain): an Appraisal of Karst Contribution to the Global Carbon Cycle Balance. <i>Environmental Earth Sciences</i> , 2010, , 469-474.	0.2	4

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91	Mineral-Forming Processes at Canelobre Cave (Alicante, SE Spain). Environmental Earth Sciences, 2010, , 503-508.	0.2	1
92	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
93	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
94	Rock fabric, pore geometry and mineralogy effects on water transport in fractured dolostones. Engineering Geology, 2009, 107, 1-15.	6.3	44
95	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
96	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
97	Peroxodisulfate as a chemical initiator for methacrylate ester monolithic columns for capillary electrochromatography. Electrophoresis, 2008, 29, 910-918.	2.4	15
98	Phosphor plasters of on the courtyard wall of Djehuty's tomb (Luxor, Egypt). Radiation Measurements, 2008, 43, 849-853.	1.4	6
99	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
100	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
101	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
102	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
103	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
104	Estudio del efecto de los acabados superficiales en granitos y calizas para su aplicaci3n en pavimentos exteriores de baldosas de piedra. Materiales De Construccion, 2008, 58, .	0.7	5
105	Salt weathering in dual-porosity building dolostones. Engineering Geology, 2007, 94, 215-226.	6.3	84
106	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
107	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
108	Salt crystallization in pores: quantification and estimation of damage. Environmental Geology, 2007, 52, 205-213.	1.2	142

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109	The influence of petrophysical properties on the salt weathering of porous building rocks. <i>Environmental Geology</i> , 2007, 52, 215-224.	1.2	137
110	A commented translation of the paper by C.W. Correns and W. Steinborn on crystallization pressure. <i>Environmental Geology</i> , 2007, 52, 187-203.	1.2	118
111	Comparison of UV-IR radioluminescence and cathodoluminescence spectra of a potassium feldspar. <i>Radiation Measurements</i> , 2007, 42, 780-783.	1.4	9
112	Assessment of the strength of building rocks using signal processing procedures. <i>Construction and Building Materials</i> , 2006, 20, 562-568.	7.2	29
113	Durability Improvement of Ancient Bricks by Cementation of Porous Media. <i>Journal of the American Ceramic Society</i> , 2005, 88, 2564-2572.	3.8	4
114	Deterioration of building materials in Roman catacombs: The influence of visitors. <i>Science of the Total Environment</i> , 2005, 349, 260-276.	8.0	75
115	Las calizas microcristalinas como material de construcción: el caso del Gris Pulpis. <i>Materiales De Construcción</i> , 2005, 55, 5-24.	0.7	4
116	Soluble salt minerals from pigeon droppings as potential contributors to the decay of stone based Cultural Heritage. <i>European Journal of Mineralogy</i> , 2004, 16, 505-509.	1.3	55
117	Role of pore structure in salt crystallisation in unsaturated porous stone. <i>Journal of Crystal Growth</i> , 2004, 260, 532-544.	1.5	159
118	Durability estimation of porous building stones from pore structure and strength. <i>Engineering Geology</i> , 2004, 74, 113-127.	6.3	229
119	Influence of surface roughness on color changes in building stones. <i>Color Research and Application</i> , 2003, 28, 343-351.	1.6	98
120	Salt influence on evaporation from porous building rocks. <i>Construction and Building Materials</i> , 2003, 17, 113-122.	7.2	29
121	The water balance equations in saline playa lakes: comparison between experimental and recent data from Quero Playa Lake (central Spain). <i>Sedimentary Geology</i> , 2002, 148, 221-234.	2.1	9
122	Predicting the Capillary Imbibition of Porous Rocks from Microstructure. <i>Transport in Porous Media</i> , 2002, 49, 59-76.	2.6	156
123	Quantification of salt weathering in porous stones using an experimental continuous partial immersion method. <i>Engineering Geology</i> , 2001, 59, 313-325.	6.3	122
124	Thermodynamic modelling of changes induced by salt pressure crystallisation in porous media of stone. <i>Journal of Crystal Growth</i> , 1999, 204, 168-178.	1.5	82
125	Mechanical Evolution of Lime Mortars during the Carbonation Process. <i>Key Engineering Materials</i> , 0, 465, 483-486.	0.4	17
126	Mechanical Characterisation of Ancient Egyptian Mortars. <i>Key Engineering Materials</i> , 0, 465, 487-490.	0.4	1



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127	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