Joaquin Izquierdo

List of Publications by Year
in descending order

121	3,094	136950	182427
papers	citations	32 h-index	51 g-index

126	126	126	2608
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Predictive models for forecasting hourly urban water demand. Journal of Hydrology, 2010, 387, 141-150.	5.4	311
2	A combined multi-criteria approach to support FMECA analyses: A real-world case. Reliability Engineering and System Safety, 2018, 169, 394-402.	8.9	153
3	Particle Swarm Optimization applied to the design of water supply systems. Computers and Mathematics With Applications, 2008, 56, 769-776.	2.7	152
4	Hybrid regression model for near real-time urban water demand forecasting. Journal of Computational and Applied Mathematics, 2017, 309, 532-541.	2.0	134
5	Battle of the Attack Detection Algorithms: Disclosing Cyber Attacks on Water Distribution Networks. Journal of Water Resources Planning and Management - ASCE, 2018, 144, .	2.6	127
6	Pipeline start-up with entrapped air. Journal of Hydraulic Research/De Recherches Hydrauliques, 1999, 37, 579-590.	1.7	90
7	Design optimization of wastewater collection networks by PSO. Computers and Mathematics With Applications, 2008, 56, 777-784.	2.7	78
8	Achieving matrix consistency in AHP through linearization. Applied Mathematical Modelling, 2011, 35, 4449-4457.	4.2	72
9	Multi-Agent Systems and Complex Networks: Review and Applications in Systems Engineering. Processes, 2020, 8, 312.	2.8	68
10	Forecasting pedestrian evacuation times by using swarm intelligence. Physica A: Statistical Mechanics and Its Applications, 2009, 388, 1213-1220.	2.6	67
11	Improved performance of PSO with self-adaptive parameters for computing the optimal design of Water Supply Systems. Engineering Applications of Artificial Intelligence, 2010, 23, 727-735.	8.1	63
12	Balancing consistency and expert judgment in AHP. Mathematical and Computer Modelling, 2011, 54, 1785-1790.	2.0	58
13	Water Distribution System Computerâ€Aided Design by Agent Swarm Optimization. Computer-Aided Civil and Infrastructure Engineering, 2014, 29, 433-448.	9.8	56
14	Improving consistency in AHP decision-making processes. Applied Mathematics and Computation, 2012, 219, 2432-2441.	2.2	50
15	Location of buried plastic pipes using multi-agent support based on GPR images. Journal of Applied Geophysics, 2011, 75, 679-686.	2.1	49
16	Multi-objective particle swarm optimization applied to water distribution systems design: An approach with human interaction. Mathematical and Computer Modelling, 2010, 52, 1219-1227.	2.0	48
17	Which method to use? An assessment of data mining methods in Environmental Data Science. Environmental Modelling and Software, 2018, 110, 3-27.	4.5	48
18	Mathematical modelling of hydraulic transients in simple systems. Mathematical and Computer Modelling, 2002, 35, 801-812.	2.0	46

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19	A flexible methodology to sectorize water supply networks based on social network theory concepts and multi-objective optimization. Journal of Hydroinformatics, 2016, 18, 62-76.	2.4	45
20	A diversity-enriched variant of discrete PSO applied to the design of water distribution networks. Engineering Optimization, 2008, 40, 655-668.	2.6	43
21	A Novel Water Supply Network Sectorization Methodology Based on a Complete Economic Analysis, Including Uncertainties. Water (Switzerland), 2016, 8, 179.	2.7	43
22	A survey on pre-processing techniques: Relevant issues in the context of environmental data mining. AI Communications, 2016, 29, 627-663.	1.2	43
23	Fault detection in water supply systems using hybrid (theory and data-driven) modelling. Mathematical and Computer Modelling, 2007, 46, 341-350.	2.0	42
24	An approach to AHP decision in a dynamic context. Decision Support Systems, 2012, 53, 499-506.	5.9	42
25	Assessing Supply Chain Risks in the Automotive Industry through a Modified MCDM-Based FMECA. Processes, 2020, 8, 579.	2.8	41
26	Multi-agent adaptive boosting on semi-supervised water supply clusters. Advances in Engineering Software, 2012, 50, 131-136.	3.8	40
27	GPR-Based Water Leak Models in Water Distribution Systems. Sensors, 2013, 13, 15912-15936.	3.8	40
28	An analytic hierarchy process for assessing externalities in water leakage management. Mathematical and Computer Modelling, 2010, 52, 1194-1202.	2.0	38
29	A simple formula to find the closest consistent matrix to a reciprocal matrix. Applied Mathematical Modelling, 2014, 38, 3968-3974.	4.2	38
30	Joint stakeholder decision-making on the management of the Silaoâ€“Romita aquifer using AHP. Environmental Modelling and Software, 2014, 51, 310-322.	4.5	36
31	Hybrid SOM+k-Means clustering to improve planning, operation and management in water distribution systems. Environmental Modelling and Software, 2018, 106, 77-88.	4.5	35
32	Flow Modeling in Pressurized Systems Revisited. Journal of Hydraulic Engineering, 1999, 125, 1154-1169.	1.5	32
33	Mathematical models and methods in the water industry. Mathematical and Computer Modelling, 2004, 39, 1353-1374.	2.0	31
34	Consistent completion of incomplete judgments in decision making using AHP. Journal of Computational and Applied Mathematics, 2015, 290, 412-422.	2.0	28
35	Social Network Community Detection for DMA Creation: Criteria Analysis through Multilevel Optimization. Mathematical Problems in Engineering, 2017, 2017, 1-12.	1.1	28
36	Water Quality Sensor Placement: A Multi-Objective and Multi-Criteria Approach. Water Resources Management, 2021, 35, 225-241.	3.9	28

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37	Joint Operation of Pressure-Reducing Valves and Pumps for Improving the Efficiency of Water Distribution Systems. Journal of Water Resources Planning and Management - ASCE, 2018, 144, .	2.6	27
38	Committee Machines for Hourly Water Demand Forecasting in Water Supply Systems. Mathematical Problems in Engineering, 2019, 2019, 1-11.	1.1	27
39	Social Network Community Detection and Hybrid Optimization for Dividing Water Supply into District Metered Areas. Journal of Water Resources Planning and Management - ASCE, 2018, 144, .	2.6	26
40	Reliability and Tolerance Comparison in Water Supply Networks. Water Resources Management, 2011, 25, 1437-1448.	3.9	25
41	A risk evaluation framework for the best maintenance strategy: The case of a marine salt manufacture firm. Reliability Engineering and System Safety, 2021, 205, 107265.	8.9	25
42	Multi-criteria optimization of supply schedules in intermittent water supply systems. Journal of Computational and Applied Mathematics, 2017, 309, 695-703.	2.0	24
43	Implementation of DMAs in Intermittent Water Supply Networks Based on Equity Criteria. Water (Switzerland), 2017, 9, 851.	2.7	23
44	Mathematical modelling of hydraulic transients in complex systems. Mathematical and Computer Modelling, 2004, 39, 529-540.	2.0	22
45	Optimal Placement of Pressure Sensors Using Fuzzy DEMATEL-Based Sensor Influence. Water (Switzerland), 2020, 12, 493.	2.7	19
46	District metered area design through multicriteria and multiobjective optimization. Mathematical Methods in the Applied Sciences, 2022, 45, 3254-3271.	2.3	19
47	A Digital Twin of a Water Distribution System by Using Graph Convolutional Networks for Pump Speed-Based State Estimation. Water (Switzerland), 2022, 14, 514.	2.7	18
48	Water Supply Network Sectorization Based on Social Networks Community Detection Algorithms. Procedia Engineering, 2014, 89, 1208-1215.	1.2	17
49	GPR image analysis to locate water leaks from buried pipes by applying variance filters. Journal of Applied Geophysics, 2018, 152, 236-247.	2.1	17
50	Sensitivity analysis to assess the relative importance of pipes in water distribution networks. Mathematical and Computer Modelling, 2008, 48, 268-278.	2.0	16
51	Water Leakage Evolution Based on GPR Interpretations. Procedia Engineering, 2014, 89, 304-310.	1.2	16
52	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si4.gif" display="inline" overflow="scroll"><mml:mi>k</mml:mi></mml:math>-out-of-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si5.gif" display="inline" overflow="scroll"><mml:mi>n</mml:mi></mml:math> systems: An exact formula for the stationary availability and multi-objective configuration design based on mathematical programming and TOPSIS. Journal of Computational and Applied Mathematics, 2018, 330, 1007-1015.	2.0	15
53	Layout Optimization Process to Minimize the Cost of Energy of an Offshore Floating Hybrid Windâ€“Wave Farm. Processes, 2020, 8, 139.	2.8	15
54	Encapsulation of air vessel design in a neural network. Applied Mathematical Modelling, 2006, 30, 395-405.	4.2	14

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55	Network Capacity Assessment and Increase in Systems with Intermittent Water Supply. Water (Switzerland), 2016, 8, 126.	2.7	14
56	Gradual transition from intermittent to continuous water supply based on multi-criteria optimization for network sector selection. Journal of Computational and Applied Mathematics, 2018, 330, 1016-1029.	2.0	14
57	Trunk Network Rehabilitation for Resilience Improvement and Energy Recovery in Water Distribution Networks. Water (Switzerland), 2018, 10, 693.	2.7	14
58	Multi-criteria analysis applied to multi-objective optimal pump scheduling in water systems. Water Science and Technology: Water Supply, 2019, 19, 2338-2346.	2.1	14
59	On-line Learning of Predictive Kernel Models for Urban Water Demand in a Smart City. Procedia Engineering, 2014, 70, 791-799.	1.2	13
60	On-Line Cyber Attack Detection in Water Networks through State Forecasting and Control by Pattern Recognition. , 2017, , .		13
61	Near Real Time Pump Optimization and Pressure Management. Procedia Engineering, 2017, 186, 666-675.	1.2	13
62	Correlation Analysis of Water Demand and Predictive Variables for Short-Term Forecasting Models. Mathematical Problems in Engineering, 2017, 2017, 1-10.	1.1	13
63	Identification of surgical practice patterns using evolutionary cluster analysis. Mathematical and Computer Modelling, 2009, 50, 705-712.	2.0	12
64	On the Complexities of the Design of Water Distribution Networks. Mathematical Problems in Engineering, 2012, 2012, 1-25.	1.1	11
65	Consistent clustering of entries in large pairwise comparison matrices. Journal of Computational and Applied Mathematics, 2018, 343, 98-112.	2.0	11
66	Characterization of the consistent completion of analytic hierarchy process comparison matrices using graph theory. Journal of Multi-Criteria Decision Analysis, 2019, 26, 3-15.	1.9	11
67	Municipal Water Demand Forecasting: Tools for Intervention Time Series. Stochastic Analysis and Applications, 2011, 29, 998-1007.	1.5	10
68	A hybrid multi-criteria approach to GPR image mining applied to water supply system maintenance. Journal of Applied Geophysics, 2018, 159, 754-764.	2.1	10
69	Cyber-Attack Detection in Water Distribution Systems Based on Blind Sources Separation Technique. Water (Switzerland), 2021, 13, 795.	2.7	10
70	Water supply system component evaluation from GPR radargrams using a multi-agent approach. Mathematical and Computer Modelling, 2013, 57, 1927-1932.	2.0	9
71	Identification of Buried Pipes Using Thermal Images and Data Mining. Procedia Engineering, 2014, 89, 1445-1451.	1.2	9
72	Cloud-based Decision Making in Water Distribution Systems. Procedia Engineering, 2014, 89, 488-494.	1.2	9

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73	Management of uncertain pairwise comparisons in AHP through probabilistic concepts. Applied Soft Computing Journal, 2019, 78, 274-285.	7.2	9
74	Discussions and Closure: Filling of Pipelines with Undulating Elevation Profiles. Journal of Hydraulic Engineering, 1997, 123, 1170-1174.	1.5	8
75	GPR data analysis using multi-agent and clustering approaches: A tool for technical management of water supply systems. , 2014, 27, 140-149.		8
76	I decide, therefore I am (relevant!): A projectâ€based learning experience in linear algebra. Computer Applications in Engineering Education, 2016, 24, 481-492.	3.4	8
77	A decision support system to assure high-performance maintenance service. Journal of Quality in Maintenance Engineering, 2021, 27, 651-670.	1.7	8
78	Constrained consistency enforcement in AHP. Applied Mathematics and Computation, 2020, 380, 125273.	2.2	8
79	Computational fluid dynamics (CFD) models in the learning process of Hydraulic Engineering. Computer Applications in Engineering Education, 2009, 18, n/a-n/a.	3.4	7
80	Managing Human Factors to Reduce Organisational Risk in Industry. Mathematical and Computational Applications, 2018, 23, 67.	1.3	7
81	Food safety risk analysis from the producers' perspective: prioritisation of production process stages by HACCP and TOPSIS. International Journal of Management and Decision Making, 2018, 17, 396.	0.1	7
82	Grand Tour Algorithm: Novel Swarm-Based Optimization for High-Dimensional Problems. Processes, 2020, 8, 980.	2.8	7
83	Ensemble of naÃ¯ve Bayesian approaches for the study of biofilm development in drinking water distribution systems. International Journal of Computer Mathematics, 2014, 91, 135-146.	1.8	6
84	Pattern Recognition and Clustering of Transient Pressure Signals for Burst Location. Water (Switzerland), 2019, 11, 2279.	2.7	6
85	Rehabilitation in Intermittent Water Distribution Networks for Optimal Operation. Water (Switzerland), 2022, 14, 88.	2.7	6
86	Water Supply Clusters by Multi-Agent Based Approach. , 2011, , .		5
87	Injecting problem-dependent knowledge to improve evolutionary optimization search ability. Journal of Computational and Applied Mathematics, 2016, 291, 281-292.	2.0	5
88	Multiâ€criteria decisionâ€making approach for modular enterprise resource planning sorting problems. Journal of Multi-Criteria Decision Analysis, 0, , .	1.9	5
89	Characterization of Consistent Completion of Reciprocal Comparison Matrices. Abstract and Applied Analysis, 2014, 2014, 1-12.	0.7	4
90	Decision-Making Tools to Manage the Microbiology of Drinking Water Distribution Systems. Water (Switzerland), 2020, 12, 1247.	2.7	4

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91	Managing expert knowledge in water network expansion project implementation. IFAC-PapersOnLine, 2021, 54, 36-40.	0.9	4
92	Multi-Agent Simulation of Hydraulic Transient Equations in Pressurized Systems. Journal of Computing in Civil Engineering, 2016, 30, 04015071.	4.7	3
93	A hybrid, auto-adaptive and rule-based multi-agent approach using evolutionary algorithms for improved searching. Engineering Optimization, 2016, 48, 1365-1377.	2.6	3
94	Hybrid Optimization Proposal for the Design of Collective On-rotation Operating Irrigation Networks. Procedia Engineering, 2017, 186, 530-536.	1.2	3
95	Enhanced Water Demand Analysis via Symbolic Approximation within an Epidemiology-Based Forecasting Framework. Water (Switzerland), 2019, 11, 246.	2.7	3
96	Hydraulic Transient Simulation in Networks Using a Multi-Agent Based Approach. , 2011, , .		2
97	Error Analysis of Some Demand Simplifications in Hydraulic Models of Water Supply Networks. Abstract and Applied Analysis, 2013, 2013, 1-13.	0.7	2
98	3D model evolution of a leak based on GPR image interpretation. Water Science and Technology: Water Supply, 2015, 15, 1312-1319.	2.1	2
99	Advanced Hydroinformatic Techniques for the Simulation and Analysis of Water Supply and Distribution Systems. Water (Switzerland), 2018, 10, 440.	2.7	2
100	Robust Design of Water Supply Systems through Evolutionary Optimization. Lecture Notes in Control and Information Sciences, 2009, , 321-330.	1.0	2
101	Multi-criteria risk classification to enhance complex supply networks performance. Opsearch, 2022, 59, 769-785.	1.8	2
102	Preference-Based Assessment ofÂOrganisational Risk inÂComplex Environments. Lecture Notes in Computer Science, 2022, , 40-52.	1.3	2
103	Mining Solution Spaces for Decision Making in Water Distribution Systems. Procedia Engineering, 2014, 70, 864-871.	1.2	1
104	Rehabilitation Actions in Water Supply Systems: Effects on Biofilm Susceptibility. Procedia Engineering, 2014, 89, 225-231.	1.2	1
105	Graph constrained label propagation on water supply networks. AI Communications, 2015, 28, 47-53.	1.2	1
106	Distributed Particle Swarm Intelligence for Optimization in the Water Industry. Mathematics in Industry, 2010, , 893-898.	0.3	1
107	Discussion of â€œFilling of Pipelines with Undulating Elevation Profilesâ€•by E. Cabrera, J. Izquierdo, J. Abreu, and P. L. Iglesias. Journal of Hydraulic Engineering, 1997, 123, 1170.	1.5	1
108	Particle swarm optimisation. WIT Transactions on State-of-the-art in Science and Engineering, 2012, , 75-99.	0.0	1

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109	Consistent Matrices and Consistency Improvement in Decision-Making Processes. , 0, , .		1
110	Scrutinizing Changes in the Water Demand Behavior. Lecture Notes in Control and Information Sciences, 2009, , 305-313.	1.0	1
111	Optimum Design and Reliability in Water Distribution Systems. Water Science and Technology Library, 1995, , 303-328.	0.3	1
112	Accreditation and dedication in Coloproctology is associated with good perioperative care. CirugÃa EspaÃ±ola (English Edition), 2011, 89, 94-100.	0.1	0
113	Normal goniometric values to guide decision-making in lower-extremity rotational problems using support vector machine techniques. Mathematical and Computer Modelling, 2013, 57, 1780-1787.	2.0	0
114	LoRaWan for Smarter Management of Water Network: From metering to data analysis. Technologien Fulˆr Die Intelligente Automation, 2019, , 133-136.	0.5	0
115	Kilimanjaro and CACAIE. Computer-Aided Civil and Infrastructure Engineering, 2021, 36, 247-247.	9.8	0
116	Agent swarm optimisation, a novel approach in swarm intelligence. , 2012, , .		0
117	Simulation of transients in Pressurized Hydraulic Systems with Visual Tools. , 1996, , 759-768.		0
118	Generalization of Pump Station Boundary Condition in Hydraulic Transient Simulation. , 1996, , 720-728.		0
119	Control and Optimization of Multi-Agent Systems and Complex Networks for Systems Engineering. Processes, 2021, 9, 2070.	2.8	0
120	Agent Swarm Optimization: A Platform to Solve Complex Optimization Problems. , 0, , .		0
121	Water Supply Clusters based on a Boosting Semi-Supervised Learning Methodology. , 0, , .		0