Saman S Razavi

List of Publications by Year
in descending order

69 papers	**3,427** citations	172457 **29** h-index
88 all docs	**88** docs citations	**88** times ranked

144013 **57** g-index

3509 citing authors

#	Article	IF	Citations
1	Review of surrogate modeling in water resources. Water Resources Research, 2012, 48, .	4.2	597
2	What do we mean by sensitivity analysis? The need for comprehensive characterization of â€œglobalâ€• sensitivity in <scp>E</scp>arth and <scp>E</scp>nvironmental systems models. Water Resources Research, 2015, 51, 3070-3092.	4.2	230
3	The Future of Sensitivity Analysis: An essential discipline for systems modeling and policy support. Environmental Modelling and Software, 2021, 137, 104954.	4.5	209
4	Introductory overview: Optimization using evolutionary algorithms and other metaheuristics. Environmental Modelling and Software, 2019, 114, 195-213.	4.5	169
5	Progressive Latin Hypercube Sampling: An efficient approach for robust sampling-based analysis of environmental models. Environmental Modelling and Software, 2017, 93, 109-126.	4.5	136
6	A new framework for comprehensive, robust, and efficient global sensitivity analysis: 1. Theory. Water Resources Research, 2016, 52, 423-439.	4.2	132
7	Numerical assessment of metamodelling strategies in computationally intensive optimization. Environmental Modelling and Software, 2012, 34, 67-86.	4.5	113
8	A New Formulation for Feedforward Neural Networks. IEEE Transactions on Neural Networks, 2011, 22, 1588-1598.	4.2	103
9	Evaluation of Integrated Multisatellite Retrievals for GPM (IMERG) over Southern Canada against Ground Precipitation Observations: A Preliminary Assessment. Journal of Hydrometeorology, 2017, 18, 1033-1050.	1.9	102
10	A new framework for comprehensive, robust, and efficient global sensitivity analysis: 2. Application. Water Resources Research, 2016, 52, 440-455.	4.2	94
11	Introductory overview of identifiability analysis: A guide to evaluating whether you have the right type of data for your modeling purpose. Environmental Modelling and Software, 2019, 119, 418-432.	4.5	93
12	Inter-comparison of daily precipitation products for large-scale hydro-climatic applications over Canada. Hydrology and Earth System Sciences, 2017, 21, 2163-2185.	4.9	80
13	Representation and improved parameterization of reservoir operation in hydrological and land-surface models. Hydrology and Earth System Sciences, 2019, 23, 3735-3764.	4.9	79
14	Historical drought patterns over Canada and their teleconnections with large-scale climate signals. Hydrology and Earth System Sciences, 2018, 22, 3105-3124.	4.9	70
15	Deep learning, explained: Fundamentals, explainability, and bridgeability to process-based modelling. Environmental Modelling and Software, 2021, 144, 105159.	4.5	63
16	VARS-TOOL: A toolbox for comprehensive, efficient, and robust sensitivity and uncertainty analysis. Environmental Modelling and Software, 2019, 112, 95-107.	4.5	62
17	Revisiting the Basis of Sensitivity Analysis for Dynamical Earth System Models. Water Resources Research, 2018, 54, 8692-8717.	4.2	58
18	Toward understanding nonstationarity in climate and hydrology through tree ring proxy records. Water Resources Research, 2015, 51, 1813-1830.	4.2	57

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19	Enhanced identification of a hydrologic model using streamflow and satellite water storage data: A multicriteria sensitivity analysis and optimization approach. Hydrological Processes, 2017, 31, 3320-3333.	2.6	53
20	Global sensitivity analysis for high-dimensional problems: How to objectively group factors and measure robustness and convergence while reducing computational cost. Environmental Modelling and Software, 2019, 111, 282-299.	4.5	53
21	An efficient framework for hydrologic model calibration on long data periods. Water Resources Research, 2013, 49, 8418-8431.	4.2	48
22	Prewhitening of hydroclimatic time series? Implications for inferred change and variability across time scales. Journal of Hydrology, 2018, 557, 109-115.	5.4	40
23	Long-lead seasonal rainfall forecasting using time-delay recurrent neural networks: a case study. Hydrological Processes, 2008, 22, 229-241.	2.6	39
24	Anthropocene flooding: Challenges for science and society. Hydrological Processes, 2020, 34, 1996-2000.	2.6	39
25	Reducing the computational cost of automatic calibration through model preemption. Water Resources Research, 2010, 46, .	4.2	38
26	Multicriteria sensitivity analysis as a diagnostic tool for understanding model behaviour and characterizing model uncertainty. Hydrological Processes, 2017, 31, 4462-4476.	2.6	38
27	Socio-technical scales in socio-environmental modeling: Managing a system-of-systems modeling approach. Environmental Modelling and Software, 2021, 135, 104885.	4.5	38
28	Insights into sensitivity analysis of Earth and environmental systems models: On the impact of parameter perturbation scale. Environmental Modelling and Software, 2017, 95, 115-131.	4.5	33
29	An Integrated Modelling System to Predict Hydrological Processes under Climate and Land-Use/Cover Change Scenarios. Water (Switzerland), 2017, 9, 767.	2.7	31
30	Sensitivity analysis: A discipline coming of age. Environmental Modelling and Software, 2021, 146, 105226.	4.5	30
31	Assessment of Extremes in Global Precipitation Products: How Reliable Are They?. Journal of Hydrometeorology, 2020, 21, 2855-2873.	1.9	28
32	The economic impacts of water supply restrictions due to climate and policy change: A transboundary river basin supply-side input-output analysis. Ecological Economics, 2020, 172, 106532.	5.7	27
33	Pre-emption strategies for efficient multi-objective optimization: Application to the development of Lake Superior regulation plan. Environmental Modelling and Software, 2014, 54, 128-141.	4.5	26
34	A multi-method Generalized Global Sensitivity Matrix approach to accounting for the dynamical nature of earth and environmental systems models. Environmental Modelling and Software, 2019, 114, 1-11.	4.5	26
35	Correlation Effects? A Major but Often Neglected Component in Sensitivity and Uncertainty Analysis. Water Resources Research, 2020, 56, e2019WR025436.	4.2	25
36	Analysis and prediction of land cover changes using the land change modeler (<scp>LCM</scp>) in a semiarid river basin, Iran. Land Degradation and Development, 2021, 32, 3092-3105.	3.9	25

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37	Reservoir Inflow Modeling Using Temporal Neural Networks with Forgetting Factor Approach. Water Resources Management, 2009, 23, 39-55.	3.9	24
38	Improved Understanding of River Ice Processes Using Global Sensitivity Analysis Approaches. Journal of Hydrologic Engineering - ASCE, 2017, 22, .	1.9	24
39	A review and synthesis of hysteresis in hydrology and hydrological modeling: Memory, path-dependency, or missing physics?. Journal of Hydrology, 2018, 566, 500-519.	5.4	24
40	On the appropriate definition of soil profile configuration and initial conditions for land surfaceâ€"hydrology models in cold regions. Hydrology and Earth System Sciences, 2018, 22, 3295-3309.	4.9	22
41	Summary and synthesis of Changing Cold Regions Network (CCRN) research in the interior of western Canada â€" PartÂ2: Future change in cryosphere, vegetation, and hydrology. Hydrology and Earth System Sciences, 2021, 25, 1849-1882.	4.9	20
42	Coevolution of machine learning and processâ€based modelling to revolutionize Earth and environmental sciences: A perspective. Hydrological Processes, 2022, 36, .	2.6	20
43	Adaptive Neural Networks for Flood Routing in River Systems. Water International, 2007, 32, 360-375.	1.0	18
44	On the configuration and initialization of a large-scale hydrological land surface model to represent permafrost. Hydrology and Earth System Sciences, 2020, 24, 349-379.	4.9	14
45	Advances in modelling large river basins in cold regions with ModÃ©lisation Environmentale Communautaireâ€"Surface and Hydrology (MESH), the Canadian hydrological land surface scheme. Hydrological Processes, 2022, 36, .	2.6	14
46	Assessment of the cascade of uncertainty in future snow depth projections across watersheds of mountainous, foothill, and plain areas in northern latitudes. Journal of Hydrology, 2021, 598, 125735.	5.4	12
47	Understanding human adaptation to drought: agent-based agricultural water demand modeling in the Bow River Basin, Canada. Hydrological Sciences Journal, 2021, 66, 389-407.	2.6	12
48	Great Lakes Runoff Intercomparison Project Phase 3: Lake Erie (GRIP-E). Journal of Hydrologic Engineering - ASCE, 2021, 26, .	1.9	12
49	Peering into agricultural rebound phenomenon using a global sensitivity analysis approach. Journal of Hydrology, 2021, 602, 126739.	5.4	12
50	Time scale effect and uncertainty in reconstruction of paleoâ€hydrology. Hydrological Processes, 2016, 30, 1985-1999.	2.6	11
51	Automatic clustering-based surrogate-assisted genetic algorithm for groundwater remediation system design. Journal of Hydrology, 2021, 598, 125752.	5.4	11
52	Correlation and causation in treeâ€ringâ€based reconstruction of paleohydrology in cold semiarid regions. Water Resources Research, 2016, 52, 7053-7069.	4.2	10
53	A Fresh Look at Variography: Measuring Dependence and Possible Sensitivities Across Geophysical Systems From Any Given Data. Geophysical Research Letters, 2020, 47, e2020GL089829.	4.0	9
54	Multi-criteria, time dependent sensitivity analysis of an event-oriented, physically-based, distributed sediment and runoff model. Journal of Hydrology, 2021, 598, 126268.	5.4	9

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55	Integrated modelling to assess the impacts of water stress in a transboundary river basin: Bridging local-scale water resource operations to a river basin economy. Science of the Total Environment, 2021, 800, 149543.	8.0	9
56	Data assimilation of satellite-based terrestrial water storage changes into a hydrology land-surface model. Journal of Hydrology, 2021, 597, 125744.	5.4	8
57	Challenges and Future Outlook of Sensitivity Analysis. , 2017, , 397-415.		7
58	Development of a Joint Probabilistic Rainfall–Runoff Model for High-to-Extreme Flow Projections Under Changing Climatic Conditions. Water Resources Research, 2022, 58, .	4.2	7
59	What should we do when a model crashes? Recommendations for global sensitivity analysis of Earth and environmental systems models. Geoscientific Model Development, 2019, 12, 4275-4296.	3.6	6
60	Evaluation of New Control Structures for Regulating the Great Lakes System: Multiscenario, Multireservoir Optimization Approach. Journal of Water Resources Planning and Management - ASCE, 2014, 140, 04014018.	2.6	5
61	Comparing the applicability of hydro-economic modelling approaches for large-scale decision-making in multi-sectoral and multi-regional river basins. Environmental Modelling and Software, 2022, 152, 105385.	4.5	5
62	Compound Effects of Climate Change on Future Transboundary Water Issues in the Middle East. Earth's Future, 2022, 10, .	6.3	4
63	Hydrologic–land surface modelling of the Canadian sporadic–discontinuous permafrost: initialization and uncertainty propagation. Hydrological Processes, 0, , .	2.6	3
64	Paleo-hydrologic reconstruction of 400 years of past flows at a weekly time step for major rivers of Western Canada. Earth System Science Data, 2020, 12, 231-243.	9.9	2
65	Application of Temporal Neural Networks in Long-Lead Rainfall Forecasting. , 2005, , 1.		1
66	Objective evaluation of the Global Environmental Multiscale Model (GEM) with precipitation and temperature for Iran. Natural Resource Modelling, 2022, 35, .	2.0	1
67	Breaking through language barriers. Science, 2021, 371, 206-206.	12.6	0
68	Avoiding the Guise of an Anonymous Review. Eos, 2018, 99, .	0.1	0
69	MODELLING GROUNDWATER-SURFACE WATER INTERACTIONS IN THE CANADIAN BOREAL REGION. , 2020, , .		0