Markus Hrachowitz

List of Publications by Year
in descending order

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82 papers	6,419 citations	71102 41 h-index	69250 77 g-index
173 all docs	173 docs citations	173 times ranked	5772 citing authors

#	Article	IF	Citations
1	Ecosystem adaptation to climate change: the sensitivity of hydrological predictions to time-dynamic model parameters. Hydrology and Earth System Sciences, 2022, 26, 1295-1318.	4.9	14
2	Applying non-parametric Bayesian networks to estimate maximum daily river discharge: potential and challenges. Hydrology and Earth System Sciences, 2022, 26, 1695-1711.	4.9	2
3	Integration of observed and model-derived groundwater levels in landslide threshold models in Rwanda. Natural Hazards and Earth System Sciences, 2022, 22, 1723-1742.	3.6	4
4	The role and value of distributed precipitation data in hydrological models. Hydrology and Earth System Sciences, 2021, 25, 147-167.	4.9	16
5	Learning from satellite observations: increased understanding of catchment processes through stepwise model improvement. Hydrology and Earth System Sciences, 2021, 25, 957-982.	4.9	18
6	Behind the scenes of streamflow model performance. Hydrology and Earth System Sciences, 2021, 25, 1069-1095.	4.9	26
7	Impact of Dataset Size on the Signature-Based Calibration of a Hydrological Model. Water (Switzerland), 2021, 13, 970.	2.7	5
8	Satellite-based drought analysis in the Zambezi River Basin: Was the 2019 drought the most extreme in several decades as locally perceived?. Journal of Hydrology: Regional Studies, 2021, 34, 100789.	2.4	7
9	Improving the Representation of Longâ€Term Storage Variations With Conceptual Hydrological Models in Dataâ€Scarce Regions. Water Resources Research, 2021, 57, e2020WR028837.	4.2	7
10	Signatures of human intervention â€“ or not? Downstream intensification of hydrological drought along a large Central Asian river: the individual roles of climate variability and land use change. Hydrology and Earth System Sciences, 2021, 25, 1943-1967.	4.9	19
11	Understanding the Information Content in the Hierarchy of Model Development Decisions: Learning From Data. Water Resources Research, 2021, 57, e2020WR027948.	4.2	22
12	Climate-controlled root zone parameters show potential to improve water flux simulations by land surface models. Earth System Dynamics, 2021, 12, 725-743.	7.1	7
13	Future changes in annual, seasonal and monthly runoff signatures in contrasting Alpine catchments in Austria. Hydrology and Earth System Sciences, 2021, 25, 3429-3453.	4.9	16
14	Reduction of vegetation-accessible water storage capacity after deforestation affects catchment travel time distributions and increases young water fractions in a headwater catchment. Hydrology and Earth System Sciences, 2021, 25, 4887-4915.	4.9	18
15	Estimating the Aquiferâ€™s Renewable Water to Mitigate the Challenges of Upcoming Megadrought Events. Water Resources Management, 2021, 35, 4927-4942.	3.9	1
16	Is a simple model based on two mixing reservoirs able to reproduce the intra-annual dynamics of DOC and NO3 stream concentrations in an agricultural headwater catchment?. Science of the Total Environment, 2021, 794, 148715.	8.0	6
17	Improved Understanding of the Link Between Catchmentâ€Scale Vegetation Accessible Storage and Satelliteâ€Derived Soil Water Index. Water Resources Research, 2020, 56, e2019WR026365.	4.2	18
18	A Novel Idea for Groundwater Resource Management during Megadrought Events. Water Resources Management, 2020, 34, 1743-1755.	3.9	10

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19	Using altimetry observations combined with GRACE to select parameter sets of a hydrological model in a data-scarce region. Hydrology and Earth System Sciences, 2020, 24, 3331-3359.	4.9	16
20	Landslide precipitation thresholds in Rwanda. Landslides, 2020, 17, 2469-2481.	5.4	20
21	Improving the Predictive Skill of a Distributed Hydrological Model by Calibration on Spatial Patterns With Multiple Satellite Data Sets. Water Resources Research, 2020, 56, e2019WR026085.	4.2	93
22	Streamflow response to forest management. Nature, 2020, 578, E12-E15.	27.8	16
23	Comparative analysis of nonparametric change-point detectors commonly used in hydrology. Hydrological Sciences Journal, 2019, 64, 1690-1710.	2.6	13
24	Trigger characteristics of torrential flows from high to low alpine regions in Austria. Science of the Total Environment, 2019, 658, 958-972.	8.0	20
25	Twenty-three unsolved problems in hydrology (UPH) â€“ a community perspective. Hydrological Sciences Journal, 2019, 64, 1141-1158.	2.6	474
26	Ecohydrologic separation alters interpreted hydrologic stores and fluxes in a headwater mountain catchment. Hydrological Processes, 2019, 33, 2658-2675.	2.6	16
27	The Demographics of Water: A Review of Water Ages in the Critical Zone. Reviews of Geophysics, 2019, 57, 800-834.	23.0	197
28	A simple topography-driven and calibration-free runoff generation module. Hydrology and Earth System Sciences, 2019, 23, 787-809.	4.9	37
29	Redressing the balance: quantifying net intercatchment groundwater flows. Hydrology and Earth System Sciences, 2018, 22, 6415-6434.	4.9	45
30	Constraining Conceptual Hydrological Models With Multiple Information Sources. Water Resources Research, 2018, 54, 8332-8362.	4.2	85
31	The Value of Using Multiple Hydrometeorological Variables to Predict Temporal Debris Flow Susceptibility in an Alpine Environment. Water Resources Research, 2018, 54, 6822-6843.	4.2	31
32	The temporally varying roles of rainfall, snowmelt and soil moisture for debris flow initiation in a snow-dominated system. Hydrology and Earth System Sciences, 2018, 22, 3493-3513.	4.9	45
33	Migration as flow: using hydrological concepts to estimate the residence time of migrating birds from the daily counts. Methods in Ecology and Evolution, 2017, 8, 1146-1157.	5.2	11
34	The importance of aspect for modelling the hydrological response in a glacier catchment in Central Asia. Hydrological Processes, 2017, 31, 2842-2859.	2.6	44
35	HESS Opinions: The complementary merits of competing modelling philosophies in hydrology. Hydrology and Earth System Sciences, 2017, 21, 3953-3973.	4.9	134
36	HESS Opinions Catchments as meta-organisms â€“ a new blueprint for hydrological modelling. Hydrology and Earth System Sciences, 2017, 21, 1107-1116.	4.9	42

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37	The importance of topography-controlled sub-grid process heterogeneity and semi-quantitative prior constraints in distributed hydrological models. Hydrology and Earth System Sciences, 2016, 20, 1151-1176.	4.9	47
38	The evolution of root-zone moisture capacities after deforestation: a step towards hydrological predictions under change?. Hydrology and Earth System Sciences, 2016, 20, 4775-4799.	4.9	61
39	Reply to comment by Porporato and Calabrese on â€œStorage selection functions: A coherent framework for quantifying how catchments store and release water and solutesâ€• Water Resources Research, 2016, 52, 616-618.	4.2	0
40	Influence of soil and climate on root zone storage capacity. Water Resources Research, 2016, 52, 2009-2024.	4.2	62
41	Accounting for the influence of vegetation and landscape improves model transferability in a tropical savannah region. Water Resources Research, 2016, 52, 7999-8022.	4.2	25
42	Transit timesâ€"the link between hydrology and water quality at the catchment scale. Wiley Interdisciplinary Reviews: Water, 2016, 3, 629-657.	6.5	184
43	Storage selection functions: A coherent framework for quantifying how catchments store and release water and solutes. Water Resources Research, 2015, 51, 4840-4847.	4.2	170
44	Transit time distributions, legacy contamination and variability in biogeochemical 1/f^{Î±} scaling: how are hydrological response dynamics linked to water quality at the catchment scale?. Hydrological Processes, 2015, 29, 5241-5256.	2.6	72
45	Hydrological hysteresis and its value for assessing process consistency in catchment conceptual models. Hydrology and Earth System Sciences, 2015, 19, 105-123.	4.9	55
46	Virtual laboratories: new opportunities for collaborative water science. Hydrology and Earth System Sciences, 2015, 19, 2101-2117.	4.9	63
47	The effect of forcing and landscape distribution on performance and consistency of model structures. Hydrological Processes, 2015, 29, 3727-3743.	2.6	41
48	Testing the realism of a topography-driven model (FLEX-Topo) in the nested catchments of the Upper Heihe, China. Hydrology and Earth System Sciences, 2014, 18, 1895-1915.	4.9	101
49	A constraint-based search algorithm for parameter identification of environmental models. Hydrology and Earth System Sciences, 2014, 18, 4861-4870.	4.9	26
50	Using expert knowledge to increase realism in environmental system models can dramatically reduce the need for calibration. Hydrology and Earth System Sciences, 2014, 18, 4839-4859.	4.9	106
51	A precipitation shift from snow towards rain leads to a decrease in streamflow. Nature Climate Change, 2014, 4, 583-586.	18.8	545
52	Uncertainties in transpiration estimates. Nature, 2014, 506, E1-E2.	27.8	157
53	Climate controls how ecosystems size the root zone storage capacity at catchment scale. Geophysical Research Letters, 2014, 41, 7916-7923.	4.0	138
54	Process consistency in models: The importance of system signatures, expert knowledge, and process complexity. Water Resources Research, 2014, 50, 7445-7469.	4.2	170

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55	INFLUENCE OF SCALE ON THERMAL CHARACTERISTICS IN A LARGE MONTANE RIVER BASIN. River Research and Applications, 2013, 29, 403-419.	1.7	47
56	A decade of Predictions in Ungauged Basins (PUB)â€"a review. Hydrological Sciences Journal, 2013, 58, 1198-1255.	2.6	821
57	A framework to assess the realism of model structures using hydrological signatures. Hydrology and Earth System Sciences, 2013, 17, 1893-1912.	4.9	197
58	What can flux tracking teach us about water age distribution patterns and their temporal dynamics?. Hydrology and Earth System Sciences, 2013, 17, 533-564.	4.9	217
59	An approach to identify time consistent model parameters: sub-period calibration. Hydrology and Earth System Sciences, 2013, 17, 149-161.	4.9	98
60	On the value of combined event runoff and tracer analysis to improve understanding of catchment functioning in a data-scarce semi-arid area. Hydrology and Earth System Sciences, 2011, 15, 2007-2024.	4.9	72
61	Hydrological landscape classification: investigating the performance of HAND based landscape classifications in a central European meso-scale catchment. Hydrology and Earth System Sciences, 2011, 15, 3275-3291.	4.9	121
62	Relative influence of upland and lowland headwaters on the isotope hydrology and transit times of larger catchments. Journal of Hydrology, 2011, 400, 438-447.	5.4	51
63	Sensitivity of mean transit time estimates to model conditioning and data availability. Hydrological Processes, 2011, 25, 980-990.	2.6	62
64	Seasonal controls on DOC dynamics in nested upland catchments in NE Scotland. Hydrological Processes, 2011, 25, 1647-1658.	2.6	48
65	Uncertainty of Precipitation Estimates Caused by Sparse Gauging Networks in a Small, Mountainous Watershed. Journal of Hydrologic Engineering - ASCE, 2011, 16, 460-471.	1.9	38
66	Evolution of the spatial and temporal characteristics of the isotope hydrology of a montane river basin. Hydrological Sciences Journal, 2011, 56, 426-442.	2.6	8
67	Catchment transit times and landscape controlsâ€"does scale matter?. Hydrological Processes, 2010, 24, 117-125.	2.6	85
68	Are transit times useful processâ€based tools for flow prediction and classification in ungauged basins in montane regions?. Hydrological Processes, 2010, 24, 1685-1696.	2.6	29
69	Isotopic and geochemical tracers reveal similarities in transit times in contrasting mesoscale catchments. Hydrological Processes, 2010, 24, 1211-1224.	2.6	36
70	Thermal regimes in a large upland salmon river: a simple model to identify the influence of landscape controls and climate change on maximum temperatures. Hydrological Processes, 2010, 24, 3374-3391.	2.6	96
71	Spatial distribution of transit times in montane catchments: conceptualization tools for management. Hydrological Processes, 2010, 24, 3283-3288.	2.6	24
72	Gamma distribution models for transit time estimation in catchments: Physical interpretation of parameters and implications for timeâ€variant transit time assessment. Water Resources Research, 2010, 46, .	4.2	146

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73	Using long-term data sets to understand transit times in contrasting headwater catchments. Journal of Hydrology, 2009, 367, 237-248.	5.4	128
74	Seasonality of epCO₂ at different scales along an integrated river continuum within the Dee basin, NE Scotland. Hydrological Processes, 2009, 23, 2929-2942.	2.6	20
75	Tracers and transit times: windows for viewing catchment scale storage?. Hydrological Processes, 2009, 23, 3503-3507.	2.6	90
76	Long-term monitoring of the Danube riverâ€"Sampling techniques, radionuclide metrology and radioecological assessment. Applied Radiation and Isotopes, 2009, 67, 894-900.	1.5	7
77	Dating of soil layers in a young floodplain using iron oxide crystallinity. Quaternary Geochronology, 2009, 4, 260-266.	1.4	57
78	Regionalization of transit time estimates in montane catchments by integrating landscape controls. Water Resources Research, 2009, 45, .	4.2	136
79	Influence of hydrology and seasonality on DOC exports from three contrasting upland catchments. Biogeochemistry, 2008, 90, 93-113.	3.5	150
80	Soil properties and distribution of radionuclides of selected soil profiles from Southern Costa Rica. Neues Jahrbuch Fur Geologie Und Palaontologie - Abhandlungen, 2008, 246, 283-297.	0.4	1
81	Soil Redistribution Model for Undisturbed and Cultivated Sites Based on Chernobyl-Derived Cesium-137 Fallout. Journal of Environmental Quality, 2005, 34, 1302-1310.	2.0	7
82	Long-term environmental monitoring and application of low-level 3H, 7Be, 137Cs and 210Pb activity concentrations in the non-biotic compartments of the Danube in Austria. Applied Radiation and Isotopes, 2004, 61, 313-317.	1.5	6