# Markus Hrachowitz

List of Publications by Year
in descending order



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|---|---|---|---|
| 82 papers | 6,419 citations | 71061 41 h-index | 69214 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. | 1.9 | 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. | 1.9 | 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. | 1.5 | 4 |
| 4 | The role and value of distributed precipitation data in hydrological models. Hydrology and Earth System Sciences, 2021, 25, 147-167. | 1.9 | 16 |
| 5 | Learning from satellite observations: increased understanding of catchment processes through stepwise model improvement. Hydrology and Earth System Sciences, 2021, 25, 957-982. | 1.9 | 18 |
| 6 | Behind the scenes of streamflow model performance. Hydrology and Earth System Sciences, 2021, 25, 1069-1095. | 1.9 | 26 |
| 7 | Impact of Dataset Size on the Signature-Based Calibration of a Hydrological Model. Water (Switzerland), 2021, 13, 970. | 1.2 | 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. | 1.0 | 7 |
| 9 | Improving the Representation of Longâ€Term Storage Variations With Conceptual Hydrological Models in Dataâ€Scarce Regions. Water Resources Research, 2021, 57, e2020WR028837. | 1.7 | 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. | 1.9 | 19 |
| 11 | Understanding the Information Content in the Hierarchy of Model Development Decisions: Learning From Data. Water Resources Research, 2021, 57, e2020WR027948. | 1.7 | 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. | 2.7 | 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. | 1.9 | 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. | 1.9 | 18 |
| 15 | Estimating the Aquiferâ€™s Renewable Water to Mitigate the Challenges of Upcoming Megadrought Events. Water Resources Management, 2021, 35, 4927-4942. | 1.9 | 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. | 3.9 | 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. | 1.7 | 18 |
| 18 | A Novel Idea for Groundwater Resource Management during Megadrought Events. Water Resources Management, 2020, 34, 1743-1755. | 1.9 | 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. | 1.9 | 16 |
| 20 | Landslide precipitation thresholds in Rwanda. Landslides, 2020, 17, 2469-2481. | 2.7 | 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. | 1.7 | 93 |
| 22 | Streamflow response to forest management. Nature, 2020, 578, E12-E15. | 13.7 | 16 |
| 23 | Comparative analysis of nonparametric change-point detectors commonly used in hydrology. Hydrological Sciences Journal, 2019, 64, 1690-1710. | 1.2 | 13 |
| 24 | Trigger characteristics of torrential flows from high to low alpine regions in Austria. Science of the Total Environment, 2019, 658, 958-972. | 3.9 | 20 |
| 25 | Twenty-three unsolved problems in hydrology (UPH) â€“ a community perspective. Hydrological Sciences Journal, 2019, 64, 1141-1158. | 1.2 | 474 |
| 26 | Ecohydrologic separation alters interpreted hydrologic stores and fluxes in a headwater mountain catchment. Hydrological Processes, 2019, 33, 2658-2675. | 1.1 | 16 |
| 27 | The Demographics of Water: A Review of Water Ages in the Critical Zone. Reviews of Geophysics, 2019, 57, 800-834. | 9.0 | 197 |
| 28 | A simple topography-driven and calibration-free runoff generation module. Hydrology and Earth System Sciences, 2019, 23, 787-809. | 1.9 | 37 |
| 29 | Redressing the balance: quantifying net intercatchment groundwater flows. Hydrology and Earth System Sciences, 2018, 22, 6415-6434. | 1.9 | 45 |
| 30 | Constraining Conceptual Hydrological Models With Multiple Information Sources. Water Resources Research, 2018, 54, 8332-8362. | 1.7 | 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. | 1.7 | 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. | 1.9 | 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. | 2.2 | 11 |
| 34 | The importance of aspect for modelling the hydrological response in a glacier catchment in Central Asia. Hydrological Processes, 2017, 31, 2842-2859. | 1.1 | 44 |
| 35 | HESS Opinions: The complementary merits of competing modelling philosophies in hydrology. Hydrology and Earth System Sciences, 2017, 21, 3953-3973. | 1.9 | 134 |
| 36 | HESS Opinions Catchments as meta-organisms â€“ a new blueprint for hydrological modelling. Hydrology and Earth System Sciences, 2017, 21, 1107-1116. | 1.9 | 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. | 1.9 | 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. | 1.9 | 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. | 1.7 | 0 |
| 40 | Influence of soil and climate on root zone storage capacity. Water Resources Research, 2016, 52, 2009-2024. | 1.7 | 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. | 1.7 | 25 |
| 42 | Transit timesâ€"the link between hydrology and water quality at the catchment scale. Wiley Interdisciplinary Reviews: Water, 2016, 3, 629-657. | 2.8 | 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. | 1.7 | 170 |
| 44 | Transit time distributions, legacy contamination and variability in biogeochemical 1/f<sup>Î±</sup> scaling: how are hydrological response dynamics linked to water quality at the catchment scale?. Hydrological Processes, 2015, 29, 5241-5256. | 1.1 | 72 |
| 45 | Hydrological hysteresis and its value for assessing process consistency in catchment conceptual models. Hydrology and Earth System Sciences, 2015, 19, 105-123. | 1.9 | 55 |
| 46 | Virtual laboratories: new opportunities for collaborative water science. Hydrology and Earth System Sciences, 2015, 19, 2101-2117. | 1.9 | 63 |
| 47 | The effect of forcing and landscape distribution on performance and consistency of model structures. Hydrological Processes, 2015, 29, 3727-3743. | 1.1 | 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. | 1.9 | 101 |
| 49 | A constraint-based search algorithm for parameter identification of environmental models. Hydrology and Earth System Sciences, 2014, 18, 4861-4870. | 1.9 | 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. | 1.9 | 106 |
| 51 | A precipitation shift from snow towards rain leads to a decrease in streamflow. Nature Climate Change, 2014, 4, 583-586. | 8.1 | 545 |
| 52 | Uncertainties in transpiration estimates. Nature, 2014, 506, E1-E2. | 13.7 | 157 |
| 53 | Climate controls how ecosystems size the root zone storage capacity at catchment scale. Geophysical Research Letters, 2014, 41, 7916-7923. | 1.5 | 138 |
| 54 | Process consistency in models: The importance of system signatures, expert knowledge, and process complexity. Water Resources Research, 2014, 50, 7445-7469. | 1.7 | 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. | 0.7 | 47 |
| 56 | A decade of Predictions in Ungauged Basins (PUB)â€"a review. Hydrological Sciences Journal, 2013, 58, 1198-1255. | 1.2 | 821 |
| 57 | A framework to assess the realism of model structures using hydrological signatures. Hydrology and Earth System Sciences, 2013, 17, 1893-1912. | 1.9 | 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. | 1.9 | 217 |
| 59 | An approach to identify time consistent model parameters: sub-period calibration. Hydrology and Earth System Sciences, 2013, 17, 149-161. | 1.9 | 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. | 1.9 | 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. | 1.9 | 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. | 2.3 | 51 |
| 63 | Sensitivity of mean transit time estimates to model conditioning and data availability. Hydrological Processes, 2011, 25, 980-990. | 1.1 | 62 |
| 64 | Seasonal controls on DOC dynamics in nested upland catchments in NE Scotland. Hydrological Processes, 2011, 25, 1647-1658. | 1.1 | 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. | 0.8 | 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. | 1.2 | 8 |
| 67 | Catchment transit times and landscape controlsâ€"does scale matter?. Hydrological Processes, 2010, 24, 117-125. | 1.1 | 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. | 1.1 | 29 |
| 69 | Isotopic and geochemical tracers reveal similarities in transit times in contrasting mesoscale catchments. Hydrological Processes, 2010, 24, 1211-1224. | 1.1 | 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. | 1.1 | 96 |
| 71 | Spatial distribution of transit times in montane catchments: conceptualization tools for management. Hydrological Processes, 2010, 24, 3283-3288. | 1.1 | 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, . | 1.7 | 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. | 2.3 | 128 |
| 74 | Seasonality of epCO<sub>2</sub> at different scales along an integrated river continuum within the Dee basin, NE Scotland. Hydrological Processes, 2009, 23, 2929-2942. | 1.1 | 20 |
| 75 | Tracers and transit times: windows for viewing catchment scale storage?. Hydrological Processes, 2009, 23, 3503-3507. | 1.1 | 90 |
| 76 | Long-term monitoring of the Danube riverâ€"Sampling techniques, radionuclide metrology and radioecological assessment. Applied Radiation and Isotopes, 2009, 67, 894-900. | 0.7 | 7 |
| 77 | Dating of soil layers in a young floodplain using iron oxide crystallinity. Quaternary Geochronology, 2009, 4, 260-266. | 0.6 | 57 |
| 78 | Regionalization of transit time estimates in montane catchments by integrating landscape controls. Water Resources Research, 2009, 45, . | 1.7 | 136 |
| 79 | Influence of hydrology and seasonality on DOC exports from three contrasting upland catchments. Biogeochemistry, 2008, 90, 93-113. | 1.7 | 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. | 0.2 | 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. | 1.0 | 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. | 0.7 | 6 |