Heye Bogena

List of Publications by Year
in descending order

116 papers	6,336 citations	71102 41 h-index	71685 76 g-index
171 all docs	171 docs citations	171 times ranked	6400 citing authors

#	Article	IF	Citations
1	On the value of soil moisture measurements in vadose zone hydrology: A review. Water Resources Research, 2008, 44, .	4.2	530
2	Old World megadroughts and pluvials during the Common Era. Science Advances, 2015, 1, e1500561.	10.3	403
3	A Network of Terrestrial Environmental Observatories in Germany. Vadose Zone Journal, 2011, 10, 955-973.	2.2	401
4	On the spatio-temporal dynamics of soil moisture at the field scale. Journal of Hydrology, 2014, 516, 76-96.	5.4	369
5	Potential of Wireless Sensor Networks for Measuring Soil Water Content Variability. Vadose Zone Journal, 2010, 9, 1002-1013.	2.2	300
6	Seasonal and event dynamics of spatial soil moisture patterns at the small catchment scale. Water Resources Research, 2012, 48, .	4.2	235
7	Accuracy of the cosmic-ray soil water content probe in humid forest ecosystems: The worst case scenario. Water Resources Research, 2013, 49, 5778-5791.	4.2	164
8	Measurements and Observations in the XXI century (MOXXI): innovation and multi-disciplinarity to sense the hydrological cycle. Hydrological Sciences Journal, 2018, 63, 169-196.	2.6	151
9	Soil hydrology: Recent methodological advances, challenges, and perspectives. Water Resources Research, 2015, 51, 2616-2633.	4.2	149
10	Complex climate controls on 20th century oak growth in Central-West Germany. Tree Physiology, 2008, 29, 39-51.	3.1	134
11	Species-specific climate sensitivity of tree growth in Central-West Germany. Trees - Structure and Function, 2009, 23, 729-739.	1.9	125
12	The International Soil Moisture Network: serving Earth system science for over a decade. Hydrology and Earth System Sciences, 2021, 25, 5749-5804.	4.9	116
13	An empirical vegetation correction for soil water content quantification using cosmic ray probes. Water Resources Research, 2015, 51, 2030-2046.	4.2	112
14	Growth/climate response shift in a long subalpine spruce chronology. Trees - Structure and Function, 2006, 20, 99-110.	1.9	106
15	Spatial patterns of central European pointer years from 1901 to 1971. Dendrochronologia, 2007, 24, 79-89.	2.2	106
16	Hybrid Wireless Underground Sensor Networks: Quantification of Signal Attenuation in Soil. Vadose Zone Journal, 2009, 8, 755-761.	2.2	98
17	Improving calibration and validation of cosmic-ray neutron sensors in the light of spatial sensitivity. Hydrology and Earth System Sciences, 2017, 21, 5009-5030.	4.9	93
18	Spatiotemporal relations between water budget components and soil water content in a forested tributary catchment. Water Resources Research, 2014, 50, 4837-4857.	4.2	88

#	Article	IF	Citations
19	Validation of Spaceborne and Modelled Surface Soil Moisture Products with Cosmic-Ray Neutron Probes. Remote Sensing, 2017, 9, 103.	4.0	87
20	Status and Perspectives on the Cosmicâ€Ray Neutron Method for Soil Moisture Estimation and Other Environmental Science Applications. Vadose Zone Journal, 2017, 16, 1-11.	2.2	87
21	Emerging methods for noninvasive sensing of soil moisture dynamics from field to catchment scale: a review. Wiley Interdisciplinary Reviews: Water, 2015, 2, 635-647.	6.5	86
22	Monitoring and Modeling the Terrestrial System from Pores to Catchments: The Transregional Collaborative Research Center on Patterns in the Soilâ€"Vegetationâ€"Atmosphere System. Bulletin of the American Meteorological Society, 2015, 96, 1765-1787.	3.3	80
23	Correction of Temperature and Electrical Conductivity Effects on Dielectric Permittivity Measurements with ECH₂O Sensors. Vadose Zone Journal, 2011, 10, 582-593.	2.2	73
24	Inter-comparison of three distributed hydrological models with respect to seasonal variability of soil moisture patterns at a small forested catchment. Journal of Hydrology, 2016, 533, 234-249.	5.4	73
25	Effective Calibration of Low-Cost Soil Water Content Sensors. Sensors, 2017, 17, 208.	3.8	72
26	500 years of regional forest growth variability and links to climatic extreme events in Europe. Environmental Research Letters, 2012, 7, 045705.	5.2	61
27	Brightness Temperature and Soil Moisture Validation at Different Scales During the SMOS Validation Campaign in the Rur and Erft Catchments, Germany. IEEE Transactions on Geoscience and Remote Sensing, 2013, 51, 1728-1743.	6.3	61
28	Catchment scale validation of SMOS and ASCAT soil moisture products using hydrological modeling and temporal stability analysis. Journal of Hydrology, 2014, 519, 934-946.	5.4	59
29	Site ecological differences to the climatic forcing of spruce pointer years from the LÃ¶tschental, Switzerland. Dendrochronologia, 2004, 21, 69-78.	2.2	58
30	Investigation of SMAP Fusion Algorithms With Airborne Active and Passive L-Band Microwave Remote Sensing. IEEE Transactions on Geoscience and Remote Sensing, 2016, 54, 3878-3889.	6.3	58
31	Predicting subgrid variability of soil water content from basic soil information. Geophysical Research Letters, 2015, 42, 789-796.	4.0	56
32	Distributed modeling of groundwater recharge at the macroscale. Ecological Modelling, 2005, 187, 15-26.	2.5	54
33	Tracer sampling frequency influences estimates of young water fraction and streamwater transit time distribution. Journal of Hydrology, 2016, 541, 952-964.	5.4	54
34	Cosmic Ray Neutron Sensing for Simultaneous Soil Water Content and Biomass Quantification in Drought Conditions. Water Resources Research, 2018, 54, 7383-7402.	4.2	54
35	Towards a network of observatories in terrestrial environmental research. Advances in Geosciences, 0, 9, 109-114.	12.0	54
36	A terrestrial observatory approach to the integrated investigation of the effects of deforestation on water, energy, and matter fluxes. Science China Earth Sciences, 2015, 58, 61-75.	5.2	50

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37	Spatio-temporal validation of long-term 3D hydrological simulations of a forested catchment using empirical orthogonal functions and wavelet coherence analysis. Journal of Hydrology, 2015, 529, 1754-1767.	5.4	49
38	Soil moisture retrieval from airborne L-band passive microwave using high resolution multispectral data. ISPRS Journal of Photogrammetry and Remote Sensing, 2014, 91, 59-71.	11.1	46
39	Dynamic response patterns of profile soil moisture wetting events under different land covers in the Mountainous area of the Heihe River Watershed, Northwest China. Agricultural and Forest Meteorology, 2019, 271, 225-239.	4.8	46
40	Seasonal soil moisture patterns: Controlling transit time distributions in a forested headwater catchment. Water Resources Research, 2014, 50, 5270-5289.	4.2	45
41	A New Soil Moisture Downscaling Approach for SMAP, SMOS, and ASCAT by Predicting Sub-Grid Variability. Remote Sensing, 2018, 10, 427.	4.0	45
42	A dense network of cosmic-ray neutron sensors for soil moisture observation in a highly instrumented pre-Alpine headwater catchment in Germany. Earth System Science Data, 2020, 12, 2289-2309.	9.9	44
43	Modeling cosmic ray neutron field measurements. Water Resources Research, 2016, 52, 6451-6471.	4.2	36
44	Altered energy partitioning across terrestrial ecosystems in the European drought year 2018. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190524.	4.0	35
45	Significance of scale and lower boundary condition in the 3D simulation of hydrological processes and soil moisture variability in a forested headwater catchment. Journal of Hydrology, 2014, 516, 140-153.	5.4	33
46	Effects of Soil Hydraulic Properties on the Spatial Variability of Soil Water Content: Evidence from Sensor Network Data and Inverse Modeling. Vadose Zone Journal, 2014, 13, vzj2014.07.0099.	2.2	33
47	Evaluation of a cosmic-ray neutron sensor network for improved land surface model prediction. Hydrology and Earth System Sciences, 2017, 21, 2509-2530.	4.9	33
48	Monitoring Hydrological Processes for Land and Water Resources Management in a Mediterranean Ecosystem: The Alento River Catchment Observatory. Vadose Zone Journal, 2018, 17, 1-12.	2.2	33
49	Error Estimation for Soil Moisture Measurements With Cosmic Ray Neutron Sensing and Implications for Rover Surveys. Frontiers in Water, 2020, 2, .	2.3	33
50	COSMOS-Europe: a European network of cosmic-ray neutron soil moisture sensors. Earth System Science Data, 2022, 14, 1125-1151.	9.9	33
51	Cosmic-ray neutron transport at a forest field site: the sensitivity to various environmental conditions with focus on biomass and canopy interception. Hydrology and Earth System Sciences, 2017, 21, 1875-1894.	4.9	31
52	Investigating temporal field sampling strategies for site-specific calibration of three soil moistureâ€“neutron intensity parameterisation methods. Hydrology and Earth System Sciences, 2015, 19, 3203-3216.	4.9	30
53	Comparing â^†Tmax Determination Approaches for Granier-Based Sapflow Estimations. Sensors, 2016, 16, 2042.	3.8	30
54	Potential of catchment-wide soil water content prediction using electromagnetic induction in a forest ecosystem. Environmental Earth Sciences, 2017, 76, 1.	2.7	30

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55	Interception effects on stable isotope driven streamwater transit time estimates. Geophysical Research Letters, 2015, 42, 5299-5308.	4.0	29
56	On the Information Content of Cosmicâ€Ray Neutron Data in the Inverse Estimation of Soil Hydraulic Properties. Vadose Zone Journal, 2019, 18, 1-24.	2.2	29
57	On the Accuracy of Factory-Calibrated Low-Cost Soil Water Content Sensors. Sensors, 2019, 19, 3101.	3.8	28
58	TERENO: German network of terrestrial environmental observatories. Journal of Large-scale Research Facilities JLSRF, 0, 2, A52.	0.0	28
59	CO2 fluxes before and after partial deforestation of a Central European spruce forest. Agricultural and Forest Meteorology, 2019, 274, 61-74.	4.8	27
60	Using High-Resolution Data to Test Parameter Sensitivity of the Distributed Hydrological Model HydroGeoSphere. Water (Switzerland), 2016, 8, 202.	2.7	24
61	Reanalysis in Earth System Science: Toward Terrestrial Ecosystem Reanalysis. Reviews of Geophysics, 2021, 59, e2020RG000715.	23.0	24
62	Climatic responses of tree-ring width and Î´13C signatures of sessile oak (Quercus petraea Liebl.) on soils with contrasting water supply. Plant Ecology, 2013, 214, 1147-1156.	1.6	22
63	Accounting for seasonal isotopic patterns of forest canopy intercepted precipitation in streamflow modeling. Journal of Hydrology, 2017, 555, 31-40.	5.4	22
64	Can Drip Irrigation be Scheduled with Cosmicâ€Ray Neutron Sensing?. Vadose Zone Journal, 2019, 18, 190053.	2.2	22
65	Time variability and uncertainty in the fraction of young water in a small headwater catchment. Hydrology and Earth System Sciences, 2019, 23, 4333-4347.	4.9	22
66	Simultaneous soil moisture and properties estimation for a drip irrigated field by assimilating cosmic-ray neutron intensity. Journal of Hydrology, 2016, 539, 611-624.	5.4	21
67	Impact of nitrogen reduction measures on the nitrogen loads of the river Ems and Rhine (Germany). Physics and Chemistry of the Earth, 2005, 30, 527-541.	2.9	20
68	Scale dependent parameterization of soil hydraulic conductivity in 3D simulation of hydrological processes in a forested headwater catchment. Journal of Hydrology, 2016, 536, 365-375.	5.4	20
69	Spatiotemporal Analysis of Dissolved Organic Carbon and Nitrate in Waters of a Forested Catchment Using Wavelet Analysis. Vadose Zone Journal, 2017, 16, 1-14.	2.2	20
70	The integrated water balance and soil data set of the Rollesbroich hydrological observatory. Earth System Science Data, 2016, 8, 517-529.	9.9	20
71	Monitoring of Snowpack Dynamics With Cosmic-Ray Neutron Probes: A Comparison of Four Conversion Methods. Frontiers in Water, 2020, 2, .	2.3	19
72	Effects of Deforestation on Water Flow in the Vadose Zone. Water (Switzerland), 2020, 12, 35.	2.7	19

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73	Multiscale Analysis of Hydrologic Time Series Data using the Hilbertâ€"Huang Transform. Vadose Zone Journal, 2010, 9, 925-942.	2.2	18
74	Cosmic Ray Neutron Soil Moisture Estimation Using Physically Based Siteâ€Specific Conversion Functions. Water Resources Research, 2020, 56, e2019WR026588.	4.2	18
75	Improving the representation of cropland sites in the Community Land Model (CLM) version 5.0. Geoscientific Model Development, 2021, 14, 573-601.	3.6	18
76	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
77	A Threeâ€Dimensional View on Soil Biogeochemistry: A Dataset for a Forested Headwater Catchment. Journal of Environmental Quality, 2017, 46, 210-218.	2.0	17
78	Using Sap Flow Data to Parameterize the Feddes Water Stress Model for Norway Spruce. Water (Switzerland), 2018, 10, 279.	2.7	17
79	Characterizing Redox Potential Effects on Greenhouse Gas Emissions Induced by Waterâ€Level Changes. Vadose Zone Journal, 2018, 17, 1-13.	2.2	17
80	Estimation of subsurface soil moisture from surface soil moisture in cold mountainous areas. Hydrology and Earth System Sciences, 2020, 24, 4659-4674.	4.9	17
81	Water fluxes and diffuse nitrate pollution at river basin scale: coupling of agro-economic models and hydrological approaches. Water Science and Technology, 2007, 55, 133-142.	2.5	16
82	Performance of the ATMOS41 All-in-One Weather Station for Weather Monitoring. Sensors, 2021, 21, 741.	3.8	16
83	Exploring the growth response of Norway spruce (Picea abies) along a small-scale gradient of soil water supply. Dendrochronologia, 2018, 52, 123-130.	2.2	14
84	The SARSense Campaign: Air- and Space-Borne C- and L-Band SAR for the Analysis of Soil and Plant Parameters in Agriculture. Remote Sensing, 2021, 13, 825.	4.0	14
85	The Footprint Characteristics of Cosmic Ray Thermal Neutrons. Geophysical Research Letters, 2021, 48, e2021GL094281.	4.0	14
86	Using HydroGeoSphere in a Forested Catchment: How does Spatial Resolution Influence the Simulation of Spatio-temporal Soil Moisture Variability?. Procedia Environmental Sciences, 2013, 19, 198-207.	1.4	11
87	Hydrologic and Geochemical Research at Pinios Hydrologic Observatory: Initial Results. Vadose Zone Journal, 2018, 17, 1-16.	2.2	11
88	Retrieving Heterogeneous Surface Soil Moisture at 100 m Across the Globe via Fusion of Remote Sensing and Land Surface Parameters. Frontiers in Water, 2020, 2, .	2.3	11
89	Uncertainties in the simulation of groundwater recharge at different scales. Advances in Geosciences, 0, 5, 25-30.	12.0	10
90	Analysing and modelling solute and sediment transport in the catchment of the Wahnbach River. Physics and Chemistry of the Earth, 2003, 28, 227-237.	2.9	9

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91	Soil moisture observation in a forested headwater catchment: combining a dense cosmic-ray neutron sensor network with roving and hydrogravimetry at the TERENO site WÃ¼stebach. Earth System Science Data, 2022, 14, 2501-2519.	9.9	9
92	Estimating the Number of Reference Sites Necessary for the Validation of Global Soil Moisture Products. IEEE Geoscience and Remote Sensing Letters, 2021, 18, 1530-1534.	3.1	8
93	The European Heat Wave 2018: The Dendroecological Response of Oak and Spruce in Western Germany. Forests, 2021, 12, 283.	2.1	8
94	Vulnerability of Trees to Climate Events in Temperate Forests of West Germany. ISRN Forestry, 2013, 2013, 1-15.	1.0	7
95	Modelling solute and sediment transport at different spatial and temporal scales. Earth Surface Processes and Landforms, 2002, 27, 1475-1489.	2.5	6
96	Management of regional German river catchments (REGFLUD) impact of nitrogen reduction measures on the nitrogen load in the River Ems and the River Rhine. Water Science and Technology, 2005, 51, 291-299.	2.5	6
97	A Dataset for Threeâ€Dimensional Distribution of 39 Elements Including Plant Nutrients and Other Metals and Metalloids in the Soils of a Forested Headwater Catchment. Journal of Environmental Quality, 2017, 46, 1510-1518.	2.0	6
98	Coupling the Community Land Model version 5.0 to the parallel data assimilation framework PDAF: description and applications. Geoscientific Model Development, 2022, 15, 395-411.	3.6	6
99	Growth and wood isotopic signature of Norway spruce (<i>Picea abies</i>) along a small-scale gradient of soil moisture. Tree Physiology, 2018, 38, 1855-1870.	3.1	5
100	Upscaling Issues in Ecohydrological Observations. Ecohydrology, 2019, , 435-454.	0.2	5
101	Longâ€term stable water isotope and runoff data for the investigation of deforestation effects on the hydrological system of the WÃ¼stebach catchment, Germany. Hydrological Processes, 2021, 35, e14006.	2.6	5
102	Active and passive L-band microwave remote sensing for soil moisture — A test-bed for SMAP fusion algorithms. , 2014, , .		4
103	Integrating Invasive and Non-invasive Monitoring Sensors to Detect Field-Scale Soil Hydrological Behavior. Frontiers in Water, 2020, 2, .	2.3	4
104	Investigating the controls on greenhouse gas emission in the riparian zone of a small headwater catchment using an automated monitoring system. Vadose Zone Journal, 2021, 20, e20149.	2.2	4
105	CLM5-FruitTree: a new sub-model for deciduous fruit trees in the Community Land Model (CLM5). Geoscientific Model Development, 2022, 15, 5167-5193.	3.6	4
106	Integrating ground-based and remote sensing-based monitoring of near-surface soil moisture in a Mediterranean environment. , 2019, , .		3
107	Ground-Based Soil Moisture Determination. Ecohydrology, 2018, , 1-42.	0.2	3
108	CRNS-based monitoring technologies for a weather and climate-resilient agriculture: realization by the ADAPTER project. , 2021, , .		3

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109	Ground-Based Soil Moisture Determination. Ecohydrology, 2019, , 29-70.	0.2	2
110	Stable-Isotope-Aided Investigation of the Effect of Redox Potential on Nitrous Oxide Emissions as Affected by Water Status and N Fertilization. Water (Switzerland), 2020, 12, 2918.	2.7	2
111	Active and passive airborne microwave remote sensing for soil moisture retrieval in the Rur catchment, Germany. , 2012, , .		1
112	Comment on Dong and Ochsner (2018): â€œSoil Texture Often Exerts Stronger Influence Than Precipitation on Mesoscale Soil Moisture Patternsâ€• Water Resources Research, 2021, 57, e2020WR027790.	4.2	1
113	Upscaling Issues in Ecohydrological Observations. Ecohydrology, 2018, , 1-21.	0.2	1
114	Sarsense: A C- and L-Band SAR Rehearsal Campaign in Germany in Preparation for ROSE-L. , 2020, , .		1
115	Comparison of Soil Water Estimates From Cosmic-Ray Neutron and Capacity Sensors in a Semi-arid Pine Forest: Which Is Able to Better Assess the Role of Environmental Conditions and Thinning?. Frontiers in Water, 2020, 2, .	2.3	0
116	Editorial: Innovative Methods for Non-invasive Monitoring of Hydrological Processes From Field to Catchment Scale. Frontiers in Water, 2021, 3, .	2.3	0