Niko E C Verhoest

List of Publications by Year
in descending order

137 papers	8,640 citations	44069 48 h-index	46799 89 g-index
165 all docs	165 docs citations	165 times ranked	8796 citing authors

#	Article	IF	Citations
1	GLEAMÂv3: satellite-based land evaporation and root-zone soil moisture. Geoscientific Model Development, 2017, 10, 1903-1925.	3.6	1,352
2	A review of spatial downscaling of satellite remotely sensed soil moisture. Reviews of Geophysics, 2017, 55, 341-366.	23.0	441
3	The future of Earth observation in hydrology. Hydrology and Earth System Sciences, 2017, 21, 3879-3914.	4.9	313
4	Random forests as a tool for ecohydrological distribution modelling. Ecological Modelling, 2007, 207, 304-318.	2.5	293
5	On the Soil Roughness Parameterization Problem in Soil Moisture Retrieval of Bare Surfaces from Synthetic Aperture Radar. Sensors, 2008, 8, 4213-4248.	3.8	272
6	El NiÃ±oâ€“La NiÃ±a cycle and recent trends in continental evaporation. Nature Climate Change, 2014, 4, 122-126.	18.8	254
7	The importance of the spatial patterns of remotely sensed soil moisture in the improvement of discharge predictions for small-scale basins through data assimilation. Journal of Hydrology, 2001, 251, 88-102.	5.4	227
8	Multivariate return periods in hydrology: a critical and practical review focusing on synthetic design hydrograph estimation. Hydrology and Earth System Sciences, 2013, 17, 1281-1296.	4.9	226
9	Rainfall partitioning into throughfall, stemflow, and interception within a single beech (Fagus) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Processes, 2008, 22, 33-45.	2.6	207
10	Satellite-Scale Snow Water Equivalent Assimilation into a High-Resolution Land Surface Model. Journal of Hydrometeorology, 2010, 11, 352-369.	1.9	160
11	Multiscale assimilation of Advanced Microwave Scanning Radiometerâ€“EOS snow water equivalent and Moderate Resolution Imaging Spectroradiometer snow cover fraction observations in northern Colorado. Water Resources Research, 2012, 48, .	4.2	147
12	A roadmap for high-resolution satellite soil moisture applications â€“ confronting product characteristics with user requirements. Remote Sensing of Environment, 2021, 252, 112162.	11.0	138
13	Spatial variability and temporal stability of throughfall water under a dominant beech (Fagus) Tj ETQq1 1 0.784314 rgBT /Overlock 10	5.4	129
14	Spatial and temporal characteristics of soil moisture in an intensively monitored agricultural field (OPE3). Journal of Hydrology, 2006, 331, 719-730.	5.4	123
15	Comparison of data-driven Takagiâ€“Sugeno models of rainfallâ€“discharge dynamics. Journal of Hydrology, 2005, 302, 173-186.	5.4	120
16	Correcting for forecast bias in soil moisture assimilation with the ensemble Kalman filter. Water Resources Research, 2007, 43, .	4.2	118
17	Crop Classification Using Short-Revisit Multitemporal SAR Data. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2011, 4, 423-431.	4.9	115
18	The importance of hydraulic groundwater theory in catchment hydrology: The legacy of Wilfried Brutsaert and Jean-Yves Parlange. Water Resources Research, 2013, 49, 5099-5116.	4.2	114

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19	Improvement of TOPLATS-based discharge predictions through assimilation of ERS-based remotely sensed soil moisture values. Hydrological Processes, 2002, 16, 995-1013.	2.6	111
20	A non-linear Granger-causality framework to investigate climateâ€“vegetation dynamics. Geoscientific Model Development, 2017, 10, 1945-1960.	3.6	110
21	Optimization of a coupled hydrology-crop growth model through the assimilation of observed soil moisture and leaf area index values using an ensemble Kalman filter. Water Resources Research, 2007, 43, .	4.2	104
22	Some analytical solutions of the linearized Boussinesq equation with recharge for a sloping aquifer. Water Resources Research, 2000, 36, 793-800.	4.2	103
23	On the applicability of Bartlettâ€“Lewis rectangular pulses models in the modeling of design storms at a point. Journal of Hydrology, 1997, 202, 108-120.	5.4	99
24	Copula-based downscaling of spatial rainfall: a proof of concept. Hydrology and Earth System Sciences, 2011, 15, 1445-1457.	4.9	94
25	On the Retrieval of Soil Moisture in Wheat Fields From L-Band SAR Based on Water Cloud Modeling, the IEM, and Effective Roughness Parameters. IEEE Geoscience and Remote Sensing Letters, 2011, 8, 740-744.	3.1	91
26	State and bias estimation for soil moisture profiles by an ensemble Kalman filter: Effect of assimilation depth and frequency. Water Resources Research, 2007, 43, .	4.2	89
27	Random Forests as a tool for estimating uncertainty at pixel-level in SAR image classification. International Journal of Applied Earth Observation and Geoinformation, 2012, 19, 173-184.	2.8	88
28	Assessment of model uncertainty for soil moisture through ensemble verification. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	87
29	Impact of Reducing Polarimetric SAR Input on the Uncertainty of Crop Classifications Based on the Random Forests Algorithm. IEEE Transactions on Geoscience and Remote Sensing, 2012, 50, 4185-4200.	6.3	84
30	A New Empirical Model for Radar Scattering from Bare Soil Surfaces. Remote Sensing, 2016, 8, 920.	4.0	82
31	The potential of multitemporal Aqua and Terra MODIS apparent thermal inertia as a soil moisture indicator. International Journal of Applied Earth Observation and Geoinformation, 2011, 13, 934-941.	2.8	79
32	Flood Mapping Based on Synthetic Aperture Radar: An Assessment of Established Approaches. IEEE Transactions on Geoscience and Remote Sensing, 2019, 57, 722-739.	6.3	78
33	Effective roughness modelling as a tool for soil moisture retrieval from C- and L-band SAR. Hydrology and Earth System Sciences, 2011, 15, 151-162.	4.9	72
34	A comparison of bulk and wet-only deposition at two adjacent sites in Melle (Belgium). Atmospheric Environment, 2005, 39, 7-15.	4.1	71
35	Integrating coarse-scale uncertain soil moisture data into a fine-scale hydrological modelling scenario. Hydrology and Earth System Sciences, 2011, 15, 3101-3114.	4.9	71
36	Error in Radar-Derived Soil Moisture due to Roughness Parameterization: An Analysis Based on Synthetical Surface Profiles. Sensors, 2009, 9, 1067-1093.	3.8	70

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37	Water balance of a lake with floodplain buffering: Lake Tana, Blue Nile Basin, Ethiopia. Journal of Hydrology, 2015, 522, 174-186.	5.4	70
38	Evaluation of the Oh, Dubois and IEM Backscatter Models Using a Large Dataset of SAR Data and Experimental Soil Measurements. Water (Switzerland), 2017, 9, 38.	2.7	67
39	Evaluating the land-surface energy partitioning in ERA5. Geoscientific Model Development, 2020, 13, 4159-4181.	3.6	64
40	Are stochastic point rainfall models able to preserve extreme flood statistics?. Hydrological Processes, 2010, 24, 3439-3445.	2.6	63
41	Scaling, similarity, and the fourth paradigm for hydrology. Hydrology and Earth System Sciences, 2017, 21, 3701-3713.	4.9	63
42	Analysis Of A 105-year time series of precipitation observed at Uccle, Belgium. International Journal of Climatology, 2006, 26, 2023-2039.	3.5	62
43	A continuous rainfall model based on vine copulas. Hydrology and Earth System Sciences, 2015, 19, 2685-2699.	4.9	61
44	Copula-Based Downscaling of Coarse-Scale Soil Moisture Observations With Implicit Bias Correction. IEEE Transactions on Geoscience and Remote Sensing, 2015, 53, 3507-3521.	6.3	60
45	Mapping basin scale variable source areas from multitemporal remotely sensed observations of soil moisture behavior. Water Resources Research, 1998, 34, 3235-3244.	4.2	56
46	Potential evaporation at eddy-covariance sites across the globe. Hydrology and Earth System Sciences, 2019, 23, 925-948.	4.9	54
47	A base flow separation algorithm based on the linearized Boussinesq equation for complex hillslopes. Water Resources Research, 2005, 41, .	4.2	53
48	Upscaling of point soil moisture measurements to field averages at the OPE3 test site. Journal of Hydrology, 2007, 343, 1-11.	5.4	52
49	Influence of Surface Roughness Spatial Variability and Temporal Dynamics on the Retrieval of Soil Moisture from SAR Observations. Sensors, 2009, 9, 463-489.	3.8	52
50	Spatial variability and temporal stability of throughfall deposition under beech (Fagus sylvatica L.) in relationship to canopy structure. Environmental Pollution, 2006, 142, 254-263.	7.5	51
51	A stochastic design rainfall generator based on copulas and mass curves. Hydrology and Earth System Sciences, 2010, 14, 2429-2442.	4.9	50
52	Effects of the floodplain on river discharge into Lake Tana (Ethiopia). Journal of Hydrology, 2014, 519, 699-710.	5.4	49
53	Terrestrial evaporation response to modes of climate variability. Npj Climate and Atmospheric Science, 2018, 1, .	6.8	49
54	Correlation between Ground Measured Soil Moisture and RADARSAT-1 derived Backscattering Coefficient over an Agricultural Catchment of Navarre (North of Spain). Biosystems Engineering, 2005, 92, 119-133.	4.3	48

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55	Remote Sensing and Wetland Ecology: a South African Case Study. Sensors, 2008, 8, 3542-3556.	3.8	47
56	Contribution of water-limited ecoregions to their own supply of rainfall. Environmental Research Letters, 2016, 11, 124007.	5.2	47
57	A possibilistic approach to soil moisture retrieval from ERS synthetic aperture radar backscattering under soil roughness uncertainty. Water Resources Research, 2007, 43, .	4.2	45
58	Semi-Empirical Calibration of the Integral Equation Model for Co-Polarized L-Band Backscattering. Remote Sensing, 2015, 7, 13626-13640.	4.0	43
59	Seasonal and annual throughfall and stemflow in Andean temperate rainforests. Hydrological Processes, 2011, 25, 623-633.	2.6	39
60	Optimization of Soil Hydraulic Model Parameters Using Synthetic Aperture Radar Data: An Integrated Multidisciplinary Approach. IEEE Transactions on Geoscience and Remote Sensing, 2009, 47, 455-467.	6.3	38
61	Spatial and temporal soil moisture estimation from RADARSAT-2 imagery over Flevoland, The Netherlands. Journal of Hydrology, 2012, 456-457, 44-56.	5.4	37
62	Sun-induced fluorescence closely linked to ecosystem transpiration as evidenced by satellite data and radiative transfer models. Remote Sensing of Environment, 2020, 249, 112030.	11.0	35
63	Analyzing runoff processes through conceptual hydrological modeling in the Upper Blue Nile Basin, Ethiopia. Hydrology and Earth System Sciences, 2014, 18, 5149-5167.	4.9	34
64	A metahillslope model based on an analytical solution to a linearized Boussinesq equation for temporally variable recharge rates. Water Resources Research, 2002, 38, 33-1-33-14.	4.2	33
65	Adaptive Soil Moisture Profile Filtering for Horizontal Information Propagation in the Independent Column-Based CLM2.0. Journal of Hydrometeorology, 2009, 10, 766-779.	1.9	32
66	Assessment of adaptive and heuristic time stepping for variably saturated flow. International Journal for Numerical Methods in Fluids, 2007, 53, 1173-1193.	1.6	31
67	Impact of soil hydraulic parameter uncertainty on soil moisture modeling. Water Resources Research, 2011, 47, .	4.2	30
68	Towards Estimating Land Evaporation at Field Scales Using GLEAM. Remote Sensing, 2018, 10, 1720.	4.0	30
69	Accounting for seasonality in a soil moisture change detection algorithm for ASAR Wide Swath time series. Hydrology and Earth System Sciences, 2012, 16, 773-786.	4.9	29
70	Seasonal Surface Drainage of Sloping Farmland: A Review of Its Hydrogeomorphic Impacts. Land Degradation and Development, 2015, 26, 35-44.	3.9	28
71	Estimating the actual evapotranspiration and deep percolation in irrigated soils of a tropical floodplain, northwest Ethiopia. Agricultural Water Management, 2018, 202, 42-56.	5.6	28
72	A Takagiâ€“Sugeno Fuzzy Rule-Based Model for Soil Moisture Retrieval From SAR Under Soil Roughness Uncertainty. IEEE Transactions on Geoscience and Remote Sensing, 2007, 45, 1351-1360.	6.3	27

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73	Impact of the timing of a SAR image acquisition on the calibration of a flood inundation model. Advances in Water Resources, 2017, 100, 126-138.	3.8	27
74	Uncertainty propagation in vegetation distribution models based on ensemble classifiers. Ecological Modelling, 2009, 220, 791-804.	2.5	26
75	Effects of drainage ditches and stone bunds on topographical thresholds for gully head development in North Ethiopia. Geomorphology, 2015, 234, 193-203.	2.6	26
76	Assessment of irrigation expansion and implications for water resources by using RS and GIS techniques in the Lake Tana Basin of Ethiopia. Environmental Monitoring and Assessment, 2021, 193, 13.	2.7	23
77	Temporal variation of rhizodeposit-C assimilating microbial communities in a natural wetland. Biology and Fertility of Soils, 2013, 49, 333-341.	4.3	22
78	Analytical Solution for Transient Water Table Heights and Outflows from Inclined Ditch-Drained Terrains. Journal of Irrigation and Drainage Engineering - ASCE, 2002, 128, 358-364.	1.0	19
79	Calibration of the modified Bartlett-Lewis model using global optimization techniques and alternative objective functions. Hydrology and Earth System Sciences, 2012, 16, 873-891.	4.9	19
80	Local sensitivity analysis for compositional data with application to soil texture in hydrologic modelling. Hydrology and Earth System Sciences, 2013, 17, 461-478.	4.9	19
81	Estimating Effective Roughness Parameters of the L-MEB Model for Soil Moisture Retrieval Using Passive Microwave Observations From SMAPVEX12. IEEE Transactions on Geoscience and Remote Sensing, 2015, 53, 4091-4103.	6.3	19
82	A coupled stochastic rainfallâ€“evapotranspiration model for hydrological impact analysis. Hydrology and Earth System Sciences, 2018, 22, 1263-1283.	4.9	19
83	Flood Mapping in Vegetated Areas Using an Unsupervised Clustering Approach on Sentinel-1 and -2 Imagery. Remote Sensing, 2020, 12, 3611.	4.0	19
84	Performance of small-scale irrigation schemes in Lake Tana Basin of Ethiopia: technical and socio-political attributes. Physical Geography, 2019, 40, 227-251.	1.4	18
85	Characteristics of rainstorms over a temperate region derived from multiple time series of weather radar images. Journal of Hydrology, 2005, 307, 126-144.	5.4	17
86	Assessment of Temporal and Spatial Variation of Nitrate Removal in Riparian Zones. Environmental Monitoring and Assessment, 2006, 116, 197-215.	2.7	17
87	Influence of Surface Roughness Measurement Scale on Radar Backscattering in Different Agricultural Soils. IEEE Transactions on Geoscience and Remote Sensing, 2017, 55, 5925-5936.	6.3	14
88	Global hydro-climatic biomes identified via multitask learning. Geoscientific Model Development, 2018, 11, 4139-4153.	3.6	14
89	Improving flood inundation forecasts through the assimilation of in situ floodplain water level measurements based on alternative observation network configurations. Advances in Water Resources, 2019, 130, 229-243.	3.8	14
90	A mathematical morphology approach for a qualitative exploration of drought events in space and time. International Journal of Climatology, 2020, 40, 530-543.	3.5	14

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91	SMOS brightness temperature assimilation into the Community Land Model. Hydrology and Earth System Sciences, 2017, 21, 5929-5951.	4.9	13
92	Possibilistic Soil Roughness Identification for Uncertainty Reduction on SAR-Retrieved Soil Moisture. IEEE Transactions on Geoscience and Remote Sensing, 2011, 49, 628-638.	6.3	12
93	On the relation between soil moisture dynamics and the geographical distribution of Culicoides imicola. Ecohydrology, 2014, 7, 622-632.	2.4	12
94	Cluster-based fuzzy models for groundwater flow in the unsaturated zone. Advances in Water Resources, 2007, 30, 701-714.	3.8	10
95	Impact of bias nonstationarity on the performance of uni- and multivariate bias-adjusting methods: a case study on data from Uccle, Belgium. Hydrology and Earth System Sciences, 2022, 26, 2319-2344.	4.9	10
96	Water Table Profiles and Discharges for an Inclined Ditch-Drained Aquifer under Temporally Variable Recharge. Journal of Irrigation and Drainage Engineering - ASCE, 2003, 129, 93-99.	1.0	9
97	An assessment of the ability of Bartlettâ€“Lewis type of rainfall models to reproduce drought statistics. Hydrology and Earth System Sciences, 2013, 17, 5167-5183.	4.9	9
98	Impact of draining hilly lands on runoff and onâ€site erosion: a case study from humid Ethiopia. Earth Surface Processes and Landforms, 2016, 41, 513-525.	2.5	8
99	Irrigation efficiency and shallow groundwater in anisotropic floodplain soils near Lake Tana, Ethiopia. Irrigation and Drainage, 2019, 68, 365-378.	1.7	8
100	Towards Operational Flood Monitoring in Flanders Using Sentinel-1. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2021, 14, 11004-11018.	4.9	8
101	Influence of topographic normalization on the vegetation indexâ€“surface temperature relationship. Journal of Applied Remote Sensing, 2012, 6, 063518.	1.3	7
102	Modelling the Spatial Distribution of Culicoides imicola: Climatic versus Remote Sensing Data. Remote Sensing, 2014, 6, 6604-6619.	4.0	7
103	Seasonality in the Angular Dependence of ASAR Wide Swath Backscatter. IEEE Geoscience and Remote Sensing Letters, 2014, 11, 1423-1427.	3.1	7
104	Assessing hydrologic prediction uncertainty resulting from soft land cover classification. Journal of Hydrology, 2014, 517, 411-424.	5.4	7
105	Scenario-based decision support for an integrated management of water resources. International Journal of River Basin Management, 2017, 15, 485-502.	2.7	7
106	Influence of Surface Roughness Sample Size for C-Band SAR Backscatter Applications on Agricultural Soils. IEEE Geoscience and Remote Sensing Letters, 2017, 14, 2300-2304.	3.1	7
107	Scaling, Similarity, and the Fourth Paradigm for Hydrology. , 2017, 21, 3701-3713.		7
108	Assessing the Potential of Fully Polarimetric Mono- and Bistatic SAR Acquisitions in L-Band for Crop and Soil Monitoring. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2022, 15, 3168-3178.	4.9	7

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109	Assimilation of Soil Moisture and Ocean Salinity (SMOS) brightness temperature into a large-scale distributed conceptual hydrological model to improve soil moisture predictions: the Murrayâ€“Darling basin in Australia as a test case. Hydrology and Earth System Sciences, 2020, 24, 4793-4812.	4.9	6
110	Soil Moisture Retrieval Using Multistatic L-Band SAR and Effective Roughness Modeling. Remote Sensing, 2022, 14, 1650.	4.0	6
111	An update on multivariate return periods in hydrology. Proceedings of the International Association of Hydrological Sciences, 0, 373, 175-178.	1.0	5
112	Reconsidering the role of Thorikos within the Laurion silver mining area (Attica, Greece) through hydrological analyses. Journal of Archaeological Science, 2014, 41, 272-284.	2.4	4
113	Identification of temporal consistency in rating curve data: Bidirectional Reach (BReach). Water Resources Research, 2016, 52, 6277-6296.	4.2	4
114	Analyzing Granger Causality in Climate Data with Time Series Classification Methods. Lecture Notes in Computer Science, 2017, , 15-26.	1.3	4
115	Integrating Remote Sensing and Wetland Ecology: a Case Study on South African Wetlands. , 2007, , .		3
116	Practical computing with interactive fuzzy variables. Applied Soft Computing Journal, 2014, 22, 518-527.	7.2	3
117	SMOS and SMAP Brightness Temperature Assimilation Over the Murrumbidgee Basin. IEEE Geoscience and Remote Sensing Letters, 2018, 15, 1652-1656.	3.1	3
118	A non-linear data-driven approach to reveal global vegetation sensitivity to climate. , 2017, , .		2
119	Global climatic drivers of vegetation based on wavelet analysis. , 2017, , .		2
120	Assessing the Potential of Fully-Polarimetric Simultaneous Mono- and Bistatic Airborne SAR Acquisitions in L-Band for Applications in Agriculture and Hydrology. , 2021, , .		2
121	Simulation of one-dimensional water movement in the unsaturated zone by means of a first order Takagi-Sugeno model. , 0, , .		1
122	Vegetation parameter retrieval from SAR data using near-surface soil moisture estimates derived from a hydrological model. , 2005, 5976, 11.		1
123	On the significance of cropâ€type information for the simulation of catchment hydrology. Hydrological Processes, 2015, 29, 915-926.	2.6	1
124	Sensitivity of C-band backscatter to surface roughness parameters measured at different scales. , 2015, , .		1
125	Consistency assessment of rating curve data in various locations using Bidirectional Reach (BReach). Hydrology and Earth System Sciences, 2017, 21, 5315-5337.	4.9	1
126	Effective Drought Communication: Using the Past to Assess the Present and Anticipate the Future. Water (Switzerland), 2021, 13, 714.	2.7	1

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127	Exploring the Effect of Occurrence-Bias-Adjustment Assumptions on Hydrological Impact Modeling. Water (Switzerland), 2021, 13, 1573.	2.7	1
128	Fuzzy Models of Rainfall-Discharge Dynamics. Lecture Notes in Computer Science, 2003, , 303-310.	1.3	1
129	Green Area Index and Soil Moisture Retrieval in Maize Fields Using Multi-Polarized C- and L-Band SAR Data and the Water Cloud Model. Remote Sensing, 2022, 14, 2496.	4.0	1
130	Effect of soil roughness uncertainty on the accuracy of soil moisture retrieval from ERS SAR backscattering. , 2005, 5976, 41.		0
131	Radar based surface soil moisture retrieval through the combined use of two backscattering models. , 2005, 5976, 425.		0
132	Assimilation of small scale soil moisture in a land surface model. , 2005, 5976, 143.		0
133	Reply to comment by C. Michel on â€œA base flow separation algorithm based on the linearized Boussinesq equation for complex hillslopesâ€• Water Resources Research, 2006, 42, .	4.2	0
134	Soil Moisture Retrieval from Synthetic Aperture Radar. , 2013, , 323-344.		0
135	Imperfect scaling in distributions of radar-derived rainfall fields. Hydrology and Earth System Sciences, 2014, 18, 5331-5344.	4.9	0
136	Investigating the control of ocean-atmospheric oscillations over global terrestrial evaporation using a simple supervised learning method. , 2017, , .		0
137	Spatio-Temporal Drought Identification Through Mathematical Morphology. Communications in Computer and Information Science, 2018, , 287-298.	0.5	0