Christoph Rudiger

List of Publications by Year
in descending order

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100 papers	3,992 citations	172457 29 h-index	128289 60 g-index
108 all docs	108 docs citations	108 times ranked	3436 citing authors

#	Article	IF	Citations
1	From near-surface to root-zone soil moisture using an exponential filter: an assessment of the method based on in-situ observations and model simulations. Hydrology and Earth System Sciences, 2008, 12, 1323-1337.	4.9	369
2	Downscaling SMOS-Derived Soil Moisture Using MODIS Visible/Infrared Data. IEEE Transactions on Geoscience and Remote Sensing, 2011, 49, 3156-3166.	6.3	328
3	Overview of SMOS performance in terms of global soil moisture monitoring after six years in operation. Remote Sensing of Environment, 2016, 180, 40-63.	11.0	240
4	Sensitivity of Sentinel-1 Backscatter to Vegetation Dynamics: An Austrian Case Study. Remote Sensing, 2018, 10, 1396.	4.0	219
5	An Intercomparison of ERS-Scat and AMSR-E Soil Moisture Observations with Model Simulations over France. Journal of Hydrometeorology, 2009, 10, 431-447.	1.9	187
6	Disaggregation of SMOS Soil Moisture in Southeastern Australia. IEEE Transactions on Geoscience and Remote Sensing, 2012, 50, 1556-1571.	6.3	185
7	An evaluation of ASCAT surface soil moisture products with in-situ observations in Southwestern France. Hydrology and Earth System Sciences, 2009, 13, 115-124.	4.9	182
8	Validation practices for satellite soil moisture retrievals: What are (the) errors?. Remote Sensing of Environment, 2020, 244, 111806.	11.0	164
9	The Soil Moisture Active Passive Experiments (SMAPEx): Toward Soil Moisture Retrieval From the SMAP Mission. IEEE Transactions on Geoscience and Remote Sensing, 2014, 52, 490-507.	6.3	154
10	WindSat Global Soil Moisture Retrieval and Validation. IEEE Transactions on Geoscience and Remote Sensing, 2010, 48, 2224-2241.	6.3	120
11	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
12	Real-Time Performance of a Self-Powered Environmental IoT Sensor Network System. Sensors, 2017, 17, 282.	3.8	99
13	Joint assimilation of surface soil moisture and LAI observations into a land surface model. Agricultural and Forest Meteorology, 2008, 148, 1362-1373.	4.8	88
14	Goulburn River experimental catchment data set. Water Resources Research, 2007, 43, .	4.2	83
15	Monitoring of water and carbon fluxes using a land data assimilation system: a case study for southwestern France. Hydrology and Earth System Sciences, 2010, 14, 1109-1124.	4.9	73
16	Estimating the Effective Soil Temperature at L-Band as a Function of Soil Properties. IEEE Transactions on Geoscience and Remote Sensing, 2008, 46, 797-807.	6.3	67
17	DisPATCh as a tool to evaluate coarse-scale remotely sensed soil moisture using localized in situ measurements: Application to SMOS and AMSR-E data in Southeastern Australia. International Journal of Applied Earth Observation and Geoinformation, 2016, 45, 221-234.	2.8	64
18	Rainfall estimation by inverting SMOS soil moisture estimates: A comparison of different methods over Australia. Journal of Geophysical Research D: Atmospheres, 2016, 121, 12,062.	3.3	59

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19	The AACES field experiments: SMOS calibration and validation across the Murrumbidgee River catchment. Hydrology and Earth System Sciences, 2012, 16, 1697-1708.	4.9	53
20	On the identification of representative in situ soil moisture monitoring stations for the validation of SMAP soil moisture products in Australia. Journal of Hydrology, 2016, 537, 367-381.	5.4	52
21	Comprehensive analysis of alternative downscaled soil moisture products. Remote Sensing of Environment, 2020, 239, 111586.	11.0	52
22	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
23	Evaluation of the observation operator Jacobian for leaf area index data assimilation with an extended Kalman filter. Journal of Geophysical Research, 2010, 115, .	3.3	45
24	Modelling LAI at a regional scale with ISBA-A-gs: comparison with satellite-derived LAI over southwestern France. Biogeosciences, 2009, 6, 1389-1404.	3.3	43
25	Towards a general equation for frequency domain reflectometers. Journal of Hydrology, 2010, 383, 319-329.	5.4	41
26	A comparison of SMOS and AMSR2 soil moisture using representative sites of the OzNet monitoring network. Remote Sensing of Environment, 2017, 195, 297-312.	11.0	41
27	Evaluation of the SMAP brightness temperature downscaling algorithm using activeâ€“passive microwave observations. Remote Sensing of Environment, 2014, 155, 210-221.	11.0	39
28	A data fusionâ€based drought index. Water Resources Research, 2016, 52, 2222-2239.	4.2	36
29	WE-Safe: A wearable IoT sensor node for safety applications via LoRa. , 2018, , .		36
30	A comparison of optical and microwave scintillometers with eddy covariance derived surface heat fluxes. Agricultural and Forest Meteorology, 2015, 213, 226-239.	4.8	32
31	Improving the Accuracy of Soil Moisture Retrievals Using the Phase Difference of the Dual-Polarization GNSS-R Interference Patterns. IEEE Geoscience and Remote Sensing Letters, 2014, 11, 2090-2094.	3.1	29
32	Soil moisture retrieval from time series multi-angular radar data using a dry down constraint. Remote Sensing of Environment, 2019, 231, 111237.	11.0	29
33	The light airborne reflectometer for GNSS-R observations (LARGO) instrument: Initial results from airborne and Rover field campaigns. , 2014, , .		21
34	Single-Pass Soil Moisture Retrieval Using GNSS-R at L1 and L5 Bands: Results from Airborne Experiment. Remote Sensing, 2021, 13, 797.	4.0	21
35	Effect of Land-Cover Type on the SMAP Active/Passive Soil Moisture Downscaling Algorithm Performance. IEEE Geoscience and Remote Sensing Letters, 2015, 12, 846-850.	3.1	20
36	Thermal properties of soil in the Murrumbidgee River Catchment (Australia). International Journal of Heat and Mass Transfer, 2017, 115, 604-614.	4.8	20

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37	A multi-frequency framework for soil moisture retrieval from time series radar data. Remote Sensing of Environment, 2019, 235, 111433.	11.0	19
38	The Soil Moisture Active Passive Experiments: Validation of the SMAP Products in Australia. IEEE Transactions on Geoscience and Remote Sensing, 2021, 59, 2922-2939.	6.3	19
39	Wheat Canopy Structure and Surface Roughness Effects on Multiangle Observations at L-Band. IEEE Transactions on Geoscience and Remote Sensing, 2012, 50, 1498-1506.	6.3	18
40	Towards soil property retrieval from space: An application with disaggregated satellite observations. Journal of Hydrology, 2015, 522, 582-593.	5.4	18
41	Simulation of the SMAP Data Stream From SMAPEx Field Campaigns in Australia. IEEE Transactions on Geoscience and Remote Sensing, 2015, 53, 1921-1934.	6.3	18
42	A Cumulative Distribution Function Method for Normalizing Variable-Angle Microwave Observations. IEEE Transactions on Geoscience and Remote Sensing, 2015, 53, 3906-3916.	6.3	18
43	On the Correlation Between GNSS-R Reflectivity and L-Band Microwave Radiometry. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2016, 9, 5862-5879.	4.9	18
44	Intercomparison of Alternate Soil Moisture Downscaling Algorithms Using Activeâ€“Passive Microwave Observations. IEEE Geoscience and Remote Sensing Letters, 2017, 14, 179-183.	3.1	18
45	Can SMOS Data be Used Directly on the 15-km Discrete Global Grid?. IEEE Transactions on Geoscience and Remote Sensing, 2014, 52, 2538-2544.	6.3	17
46	On the Airborne Spatial Coverage Requirement for Microwave Satellite Validation. IEEE Geoscience and Remote Sensing Letters, 2011, 8, 824-828.	3.1	16
47	Variability of soil moisture proxies and hot days across the climate regimes of Australia. Geophysical Research Letters, 2017, 44, 7265-7275.	4.0	16
48	Untangling the Incoherent and Coherent Scattering Components in GNSS-R and Novel Applications. Remote Sensing, 2020, 12, 1208.	4.0	16
49	Disaggregation of Low-Resolution L-Band Radiometry Using C-Band Radar Data. IEEE Geoscience and Remote Sensing Letters, 2016, 13, 1425-1429.	3.1	15
50	The Polarimetric L-Band Imaging Synthetic Aperture Radar (PLIS): Description, Calibration, and Cross-Validation. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2018, 11, 4513-4525.	4.9	15
51	Towards soil property retrieval from space: Proof of concept using in situ observations. Journal of Hydrology, 2014, 512, 27-38.	5.4	14
52	Satellite Cross-Talk Impact Analysis in Airborne Interferometric Global Navigation Satellite System-Reflectometry with the Microwave Interferometric Reflectometer. Remote Sensing, 2019, 11, 1120.	4.0	14
53	Flood Inundation Mapping by Combining GNSS-R Signals with Topographical Information. Remote Sensing, 2020, 12, 3026.	4.0	14
54	Soil Salinity Impacts on L-Band Remote Sensing of Soil Moisture. IEEE Geoscience and Remote Sensing Letters, 2012, 9, 262-266.	3.1	13

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55	Towards soil property retrieval from space: A one-dimensional twin-experiment. Journal of Hydrology, 2013, 497, 198-207.	5.4	12
56	Medium-Resolution Soil Moisture Retrieval Using the Bayesian Merging Method. IEEE Transactions on Geoscience and Remote Sensing, 2017, 55, 6482-6493.	6.3	12
57	Design and field test of an autonomous IoT WSN platform for environmental monitoring. , 2017, , .		12
58	Evaluation of the Tauâ€“Omega Model for Passive Microwave Soil Moisture Retrieval Using SMAPEx Datasets. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2018, 11, 888-895.	4.9	12
59	Retrieval of Snow Depth and Snow Water Equivalent Using Dual Polarization SAR Data. Remote Sensing, 2020, 12, 1183.	4.0	12
60	Toward Vicarious Calibration of Microwave Remote-Sensing Satellites in Arid Environments. IEEE Transactions on Geoscience and Remote Sensing, 2014, 52, 1749-1760.	6.3	11
61	Experimental Evidence of Swell Signatures in Airborne L5/E5a GNSS-Reflectometry. Remote Sensing, 2020, 12, 1759.	4.0	11
62	Low soil moisture and high temperatures as indicators for forest fire occurrence and extent across the Iberian Peninsula. , 2015, , .		10
63	Evaluation of SMAP downscaled brightness temperature using SMAPEx-4/5 airborne observations. Remote Sensing of Environment, 2019, 221, 363-372.	11.0	9
64	A Wearable Multi-sensor IoT Network System for Environmental Monitoring. Internet of Things, 2019, , 29-38.	1.7	8
65	Multi-temporal SAR observations of the Surat Basin in Australia for deformation scenario evaluation associated with man-made interactions. Environmental Earth Sciences, 2016, 75, 1.	2.7	7
66	A Novel Approach for the Snow Water Equivalent Retrieval Using X-Band Polarimetric Synthetic Aperture Radar Data. IEEE Transactions on Geoscience and Remote Sensing, 2021, 59, 3753-3763.	6.3	7
67	RADAR-Vegetation Structural Perpendicular Index (R-VSPI) for the Quantification of Wildfire Impact and Post-Fire Vegetation Recovery. Remote Sensing, 2022, 14, 3132.	4.0	6
68	Validating the data fusionâ€based drought index across Queensland, Australia, and investigating interdependencies with remote drivers. International Journal of Climatology, 2018, 38, 4102-4115.	3.5	5
69	AI for monitoring the Sustainable Development Goals and supporting and promoting action and policy development. , 2020, , .		5
70	Active and passive L-band microwave remote sensing for soil moisture — A test-bed for SMAP fusion algorithms. , 2014, , .		4
71	Similarities Between Spaceborne Active and Airborne Passive Microwave Observations at 1 km Resolution. IEEE Geoscience and Remote Sensing Letters, 2014, 11, 2178-2182.	3.1	4
72	Design and Implementation of a Low-Power Wireless Sensor Network Platform Based on XBee. , 2017, , .		4

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73	Nonâ€Stationary Influences of Largeâ€Scale Climate Drivers on Low Flow Extremes in Southeast Australia. Water Resources Research, 2022, 58, .	4.2	4
74	Disaggregation as a top-down approach for evaluating 40 km resolution SMOS data using point-scale measurements: application to AACES-1. , 2010, , .		3
75	Statistical analysis of short-term water stress conditions at Riggs Creek OzFlux tower site. Theoretical and Applied Climatology, 2017, 130, 497-509.	2.8	3
76	The Vegetation Structure Perpendicular Index for Wildfire Severity and Forest Recovery Monitoring. , 2018, , .		3
77	Improved GNSS-R Altimetry Methods: Theory and Experimental Demonstration Using Airborne Dual Frequency Data from the Microwave Interferometric Reflectometer (MIR). Remote Sensing, 2021, 13, 4186.	4.0	3
78	Vegetation Canopy Height Retrieval Using L1 and L5 Airborne GNSS-R. IEEE Geoscience and Remote Sensing Letters, 2022, 19, 1-5.	3.1	3
79	Towards validation of SMAP: SMAPEX-4 & -5. , 2016, , .		2
80	Comparison of downscaling techniques for high resolution soil moisture mapping. , 2017, , .		2
81	Live Demonstration: An IoT Platform for Environmental Monitoring Using Self-Powered Sensors. , 2018, , .		2
82	Surface rock effects on soil moisture retrieval from L-band passive microwave observations. Remote Sensing of Environment, 2018, 215, 33-43.	11.0	2
83	Identification of Agricultural Row Features Using Optical Data for Scattering and Reflectance Modeling Over Periodic Surfaces. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2020, 13, 1729-1739.	4.9	2
84	Lightweight and Compact Radiometers for Soil Moisture Measurement: A review. IEEE Geoscience and Remote Sensing Magazine, 2022, 10, 231-250.	9.6	2
85	Untangling the GNSS-R Coherent and Incoherent Components: Experimental Evidences Over the Ocean. , 2020, , .		2
86	Aggregation and disaggregation of synthetic l-band soil moisture data over South-western France in preparation of SMOS. , 2007, , .		1
87	Soil Moisture Remote Sensing for Numerical Weather Prediction: L-Band and C-Band Emission Modeling Over Land Surfaces, the Community Microwave Emission Model (CMEM). , 2008, , .		1
88	Utilisation de mesures in situ dâ€™humiditÃ© des sols pour lâ€™Ã©valuation des produits satellitaires micro-ondes dans le Sud-Ouest de la France. Houille Blanche, 2010, 96, 120-126.	0.3	1
89	Active and passive airborne microwave remote sensing for soil moisture retrieval in the Rur catchment, Germany. , 2012, , .		1
90	Airborne forest monitoring during SMAPEx-3 campaign. , 2013, , .		1

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91	The effect of radar configuration on effective correlation length. , 2016, , .		1
92	Impact of Urban Cover Fraction on SMOS and SMAP Surface Soil Moisture Retrieval Accuracy. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2019, 12, 3338-3350.	4.9	1
93	A Novel Approach for The Retrieval Of Snow Water Equivalent Using SAR Data. , 2019, , .		1
94	Use of in-situ soil moisture measurements to evaluate microwave remote sensing products in south-western France. , 2009, , .		0
95	Soil Moisture Retrieval over Agricultural Fields from Time Series Multi-Angular L-Band Radar Data. , 2018, , .		0
96	Comparison of Different High-Resolution Soil Moisture Products Across an Agricultural Landscape in South-Eastern Australia. , 2018, , .		0
97	Preliminary End- to-End Results of the MIR Instrument: the Microwave Interferometric Reflectometer. , 2018, , .		0
98	Estimation of Forest Structure with the Vegetation Structure Perpendicular Index (VSPI) for Dynamic Fire Spread Simulations. , 2019, , .		0
99	Parameter Considerations for the Retrieval of Surface Soil Moisture from Spaceborne GNSS-R. , 2021, , .		0
100	First Experimental Evidence of Wind and Swell Signatures in L5 GPS and E5A Galileo GNSS-R Waveforms. , 2020, , .		0