Sascha E Oswald

List of Publications by Year
in descending order

83	3,446	109264	149623
papers	citations	35 h-index	56 g-index

100	100	100	3271
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Dynamics of soil water content in the rhizosphere. Plant and Soil, 2010, 332, 163-176.	1.8	308
2	Three-dimensional visualization and quantification of water content in the rhizosphere. New Phytologist, 2011, 192, 653-663.	3.5	140
3	When Roots Lose Contact. Vadose Zone Journal, 2009, 8, 805-809.	1.3	131
4	Quantitative Imaging of Infiltration, Root Growth, and Root Water Uptake via Neutron Radiography. Vadose Zone Journal, 2008, 7, 1035-1047.	1.3	107
5	The Bode hydrological observatory: a platform for integrated, interdisciplinary hydro-ecological research within the TERENO Harz/Central German Lowland Observatory. Environmental Earth Sciences, 2017, 76, 1.	1.3	93
6	Improving calibration and validation of cosmic-ray neutron sensors in the light of spatial sensitivity. Hydrology and Earth System Sciences, 2017, 21, 5009-5030.	1.9	93
7	Three-dimensional physical benchmark experiments to test variable-density flow models. Journal of Hydrology, 2004, 290, 22-42.	2.3	88
8	Dissolved Oxygen Imaging in a Porous Medium to Investigate Biodegradation in a Plume with Limited Electron Acceptor Supply. Environmental Science & Technology, 2003, 37, 1905-1911.	4.6	85
9	The saltpool benchmark problem â€“ numerical simulation of saltwater upconing in a porous medium. Advances in Water Resources, 2002, 25, 335-348.	1.7	84
10	Is the Rhizosphere Temporarily Water Repellent?. Vadose Zone Journal, 2012, 11, vzj2011.0120.	1.3	83
11	Multi-temporal surveys for microplastic particles enabled by a novel and fast application of SWIR imaging spectroscopy â€“ Study of an urban watercourse traversing the city of Berlin, Germany. Environmental Pollution, 2018, 239, 579-589.	3.7	82
12	Neutron radiography as a tool for revealing root development in soil: capabilities and limitations. Plant and Soil, 2009, 318, 243-255.	1.8	81
13	How the Rhizosphere May Favor Water Availability to Roots. Vadose Zone Journal, 2011, 10, 988-998.	1.3	81
14	Hydraulic controls of inâ€stream gravel bar hyporheic exchange and reactions. Water Resources Research, 2015, 51, 2243-2263.	1.7	76
15	Visualization of root growth in heterogeneously contaminated soil using neutron radiography. European Journal of Soil Science, 2007, 58, 802-810.	1.8	74
16	Integral quantification of seasonal soil moisture changes in farmland by cosmic-ray neutrons. Hydrology and Earth System Sciences, 2011, 15, 3843-3859.	1.9	74
17	Capturing 3D Water Flow in Rooted Soil by Ultra-fast Neutron Tomography. Scientific Reports, 2017, 7, 6192.	1.6	74
18	Continuous monitoring of snowpack dynamics in alpine terrain by aboveground neutron sensing. Water Resources Research, 2017, 53, 3615-3634.	1.7	72

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19	Observation of flow and transport processes in artificial porous media via magnetic resonance imaging in three dimensions. Geoderma, 1997, 80, 417-429.	2.3	66
20	Modeling Kinetic Processes Controlling Hydrogen and Acetate Concentrations in an Aquifer-Derived Microcosm. Environmental Science & Technology, 2003, 37, 3910-3919.	4.6	62
21	Remediation of groundwater contaminated with MTBE and benzene: The potential of vertical-flow soil filter systems. Water Research, 2011, 45, 5063-5074.	5.3	58
22	Neutron radiography and tomography of water distribution in the root zone. Journal of Plant Nutrition and Soil Science, 2010, 173, 757-764.	1.1	57
23	A field investigation on transport of carbon-supported nanoscale zero-valent iron (nZVI) in groundwater. Journal of Contaminant Hydrology, 2015, 181, 59-68.	1.6	56
24	A scaling approach for the assessment of biomass changes and rainfall interception using cosmic-ray neutron sensing. Journal of Hydrology, 2015, 525, 264-276.	2.3	54
25	Cosmicâ€ray Neutron Rover Surveys of Field Soil Moisture and the Influence of Roads. Water Resources Research, 2018, 54, 6441-6459.	1.7	53
26	Water regime of metal-contaminated soil under juvenile forest vegetation. Plant and Soil, 2005, 271, 227-241.	1.8	51
27	Mapping of nickel in root cross-sections of the hyperaccumulator plant Berkheya coddii using laser ablation ICP-MS. Environmental and Experimental Botany, 2010, 69, 24-31.	2.0	51
28	Verification and intercomparison of reactive transport codes to describe root-uptake. Plant and Soil, 2006, 285, 305-321.	1.8	45
29	Intercomparison of cosmic-ray neutron sensors and water balance monitoring in an urban environment. Geoscientific Instrumentation, Methods and Data Systems, 2018, 7, 83-99.	0.6	44
30	Temperature-dependent redox zonation, nitrate removal and attenuation of organic micropollutants during bank filtration. Water Research, 2019, 162, 225-235.	5.3	44
31	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.	3.7	44
32	Spatio-temporal mapping of local soil pH changes induced by roots of lupin and soft-rush. Plant and Soil, 2013, 369, 669-680.	1.8	43
33	Modeling the Dynamics of Fermentation and Respiratory Processes in a Groundwater Plume of Phenolic Contaminants Interpreted from Laboratory- to Field-Scale. Environmental Science & Technology, 2005, 39, 8829-8839.	4.6	40
34	Numerical simulation of three-dimensional saltwaterâ€“freshwater fingering instabilities observed in a porous medium. Advances in Water Resources, 2006, 29, 1690-1704.	1.7	39
35	What comes NeXT? â€“ High-Speed Neutron Tomography at ILL. Optics Express, 2019, 27, 28640.	1.7	39
36	Dynamic oxygen mapping in the root zone by fluorescence dye imaging combined with neutron radiography. Journal of Soils and Sediments, 2012, 12, 63-74.	1.5	38

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37	COSMOS-Europe: a European network of cosmic-ray neutron soil moisture sensors. Earth System Science Data, 2022, 14, 1125-1151.	3.7	33
38	Biodegradation Processes in a Laboratory-Scale Groundwater Contaminant Plume Assessed by Fluorescence Imaging and Microbial Analysis. Applied and Environmental Microbiology, 2007, 73, 3865-3876.	1.4	31
39	Transport of carbon colloid supported nanoscale zero-valent iron in saturated porous media. Journal of Contaminant Hydrology, 2014, 164, 25-34.	1.6	31
40	Sensing Areaâ€Average Snow Water Equivalent with Cosmicâ€Ray Neutrons: The Influence of Fractional Snow Cover. Water Resources Research, 2019, 55, 10796-10812.	1.7	30
41	Coupled Longâ€Term Simulation of Reachâ€Scale Water and Heat Fluxes Across the Riverâ€Groundwater Interface for Retrieving Hyporheic Residence Times and Temperature Dynamics. Water Resources Research, 2017, 53, 8900-8924.	1.7	29
42	Analysis of nickel concentration profiles around the roots of the hyperaccumulator plant Berkheya coddii using MRI and numerical simulations. Plant and Soil, 2010, 328, 291-302.	1.8	27
43	Mapping water, oxygen, and pH dynamics in the rhizosphere of young maize roots. Journal of Plant Nutrition and Soil Science, 2017, 180, 336-346.	1.1	26
44	Sand box experiments to evaluate the influence of subsurface temperature probe design on temperature based water flux calculation. Hydrology and Earth System Sciences, 2011, 15, 3495-3510.	1.9	25
45	Analysis of riverbed temperatures to determine the geometry of subsurface water flow around in-stream geomorphological structures. Journal of Hydrology, 2016, 539, 74-87.	2.3	25
46	Nuclear Magnetic Resonance Imaging for Studies of Flow and Transport in Porous Media. Journal of Environmental Quality, 2002, 31, 477.	1.0	24
47	Treatment of volatile organic contaminants in a vertical flow filter: Relevance of different removal processes. Ecological Engineering, 2011, 37, 1292-1303.	1.6	24
48	Mapping compensating root water uptake in heterogeneous soil conditions via neutron radiography. Plant and Soil, 2015, 397, 273-287.	1.8	23
49	A multi-imaging approach to study the rootâ€“soil interface. Annals of Botany, 2014, 114, 1779-1787.	1.4	22
50	Title is missing!. Transport in Porous Media, 2002, 47, 169-193.	1.2	21
51	Magnetic resonance imaging methods to reveal the realâ€time distribution of nickel in porous media. European Journal of Soil Science, 2008, 59, 476-485.	1.8	21
52	Evaluation of groundwater dynamics and quality in the Najd aquifers located in the Sultanate of Oman. Environmental Earth Sciences, 2012, 66, 1195-1211.	1.3	21
53	Investigations on mobility of carbon colloid supported nanoscale zero-valent iron (nZVI) in a column experiment and a laboratory 2D-aquifer test system. Environmental Science and Pollution Research, 2014, 21, 10908-10916.	2.7	20
54	A profile shape correction to reduce the vertical sensitivity of cosmicâ€ray neutron sensing of soil moisture. Vadose Zone Journal, 2020, 19, e20083.	1.3	18

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55	Inverse modelling of cosmicâ€ray soil moisture for fieldâ€scale soil hydraulic parameters. European Journal of Soil Science, 2014, 65, 876-886.	1.8	17
56	Combination of Magnetic Resonance Imaging and Neutron Computed Tomography for Threeâ€Dimensional Rhizosphere Imaging. Vadose Zone Journal, 2019, 18, 1-11.	1.3	17
57	Kinetic Gasâˆ'Water Transfer and Gas Accumulation in Porous Media during Pulsed Oxygen Sparging. Environmental Science & Technology, 2007, 41, 4428-4434.	4.6	16
58	Combining Neutron and Magnetic Resonance Imaging to Study the Interaction of Plant Roots and Soil. Physics Procedia, 2015, 69, 237-243.	1.2	15
59	Non-invasive imaging techniques to study O2 micro-patterns around pesticide treated lupine roots. Geoderma, 2015, 239-240, 257-264.	2.3	15
60	Seasonal dynamics modifies fate of oxygen, nitrate, and organic micropollutants during bank filtrationÂâ€"Âtemperature-dependent reactive transport modeling of field data. Environmental Science and Pollution Research, 2021, 28, 9682-9700.	2.7	15
61	Non-invasive detection and localization of microplastic particles in a sandy sediment by complementary neutron and X-ray tomography. Journal of Soils and Sediments, 2021, 21, 1476-1487.	1.5	15
62	Neutrons on Rails: Transregional Monitoring of Soil Moisture and Snow Water Equivalent. Geophysical Research Letters, 2021, 48, .	1.5	14
63	Spatio-temporal soil moisture retrieval at the catchment scale using a dense network of cosmic-ray neutron sensors. Hydrology and Earth System Sciences, 2021, 25, 4807-4824.	1.9	12
64	Advantages of using adaptive remeshing and parallel processing for modelling biodegradation in groundwater. Advances in Water Resources, 2005, 28, 1143-1158.	1.7	11
65	Three-dimensional saltwaterâ€"freshwater fingering in porous media: contrast agent MRI as basis for numerical simulations. Magnetic Resonance Imaging, 2007, 25, 537-540.	1.0	11
66	Interplay between oxygen demand reactions and kinetic gasâ€"water transfer in porous media. Water Research, 2008, 42, 3579-3590.	5.3	11
67	Numerical modeling analysis of VOC removal processes in different aerobic vertical flow systems for groundwater remediation. Journal of Contaminant Hydrology, 2013, 154, 53-69.	1.6	11
68	Impact of river reconstruction on groundwater flow during bank filtration assessed by transient three-dimensional modelling of flow and heat transport. Hydrogeology Journal, 2020, 28, 723-743.	0.9	11
69	Three-dimensional in vivo analysis of water uptake and translocation in maize roots by fast neutron tomography. Scientific Reports, 2021, 11, 10578.	1.6	11
70	Removal of Volatile Organic Compounds in Vertical Flow Filters: Predictions from Reactive Transport Modeling. Ground Water Monitoring and Remediation, 2012, 32, 106-121.	0.6	9
71	Nitrogen as an indicator of mass transfer during in-situ gas sparging. Journal of Contaminant Hydrology, 2011, 126, 8-18.	1.6	8
72	Dynamic groundwater recharge simulations based on cosmicâ€ray neutron sensing in a tropical wet experimental basin. Vadose Zone Journal, 2021, 20, e20145.	1.3	7

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73	Assessing the feasibility of a directional cosmic-ray neutron sensing sensor for estimating soil moisture. Geoscientific Instrumentation, Methods and Data Systems, 2022, 11, 75-92.	0.6	7
74	Applications of Neutron Imaging in Soil-Water-Root Systems. SSSA Special Publication Series, 0, , 113-136.	0.2	6
75	Neutron computed laminography yields 3D root system architecture and complements investigations of spatiotemporal rhizosphere patterns. Plant and Soil, 2021, 469, 489-501.	1.8	6
76	A lumped parameter approach to model the treatment of organic contaminants by a granular iron filled fracture. Advances in Water Resources, 2006, 29, 624-638.	1.7	5
77	Imaging of root zone processes using MRI T 1 mapping. Microporous and Mesoporous Materials, 2018, 269, 43-46.	2.2	5
78	Relating P Lability in Stream Sediments to Watershed Land Use via an Effective Sequential Extraction Scheme. Water, Air, and Soil Pollution, 2013, 224, 1.	1.1	3
79	An Alternative Incoming Correction for Cosmicâ€Ray Neutron Sensing Observations Using Local Muon Measurement. Geophysical Research Letters, 2022, 49, .	1.5	3
80	A satellite-based approach to estimating spatially distributed groundwater recharge rates in a tropical wet sedimentary region despite cloudy conditions. Journal of Hydrology, 2022, 607, 127503.	2.3	2
81	Assessment of a new non-invasive soil moisture sensor based on cosmic-ray neutrons. , 2021, , .		1
82	The importance of dispersive mixing for modelling of density-dependent and reactive transport. Developments in Water Science, 2002, , 501-506.	0.1	0
83	Multitemporal soil moisture monitoring by use of optical remote sensing data in a dike relocation area. , 2018, , .		0