Wilfred W Otten

List of Publications by Year
in descending order

79	4,194	94433 37	118850 62
papers	citations	h-index	g-index

80	80	80	5042
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Functional root traitâ€based classification of cover crops to improve soil physical properties. European Journal of Soil Science, 2022, 73, .	3.9	33
2	Accounting for soil architecture and microbial dynamics in microscale models: Current practices in soil science and the path ahead. European Journal of Soil Science, 2022, 73, .	3.9	22
3	Scenario modelling of carbon mineralization in <scp>3D</scp> soil architecture at the microscale: Toward an accessibility coefficient of organic matter for bacteria. European Journal of Soil Science, 2022, 73, .	3.9	10
4	A holistic perspective on soil architecture is needed as a key to soil functions. European Journal of Soil Science, 2022, 73, .	3.9	62
5	Lessons from a landmark 1991 article on soil structure: distinct precedence of non-destructive assessment and benefits of fresh perspectives in soil research. Soil Research, 2022, 60, 321-336.	1.1	9
6	Building soil sustainability from rootâ€“soil interface traits. Trends in Plant Science, 2022, 27, 688-698.	8.8	24
7	Understanding the joint impacts of soil architecture and microbial dynamics on soil functions: Insights derived from microscale models. European Journal of Soil Science, 2022, 73, .	3.9	10
8	Influence of soil structure on the spread of <scp>Pseudomonas fluorescens</scp> in soil at microscale. European Journal of Soil Science, 2021, 72, 141-153.	3.9	29
9	On allowing for transient variation in endâ€member <scp>Î´¹³C</scp> values in partitioning soil <scp>C</scp> fluxes from net ecosystem respiration. European Journal of Soil Science, 2021, 72, 2343-2355.	3.9	3
10	Uranium diffusion and timeâ€dependent adsorptionâ€“desorption in soil: A model and experimental testing of the model. European Journal of Soil Science, 2020, 71, 215-225.	3.9	5
11	Three-Dimensional Study of F. graminearum Colonisation of Stored Wheat: Post-Harvest Growth Patterns, Dry Matter Losses and Mycotoxin Contamination. Microorganisms, 2020, 8, 1170.	3.6	7
12	A field system for measuring plant and soil carbon fluxes using stable isotope methods. European Journal of Soil Science, 2020, , .	3.9	5
13	Combination of techniques to quantify the distribution of bacteria in their soil microhabitats at different spatial scales. Geoderma, 2019, 334, 165-174.	5.1	53
14	Hardware Acceleration of Reaction-Diffusion Systems: A Guide to Optimisation of Pattern Formation Algorithms Using Openacc. , 2019, , .		1
15	Editorial: Elucidating Microbial Processes in Soils and Sediments: Microscale Measurements and Modeling. Frontiers in Environmental Science, 2019, 7, .	3.3	7
16	Soil aggregates as biogeochemical reactors: Not a way forward in the research on soilâ€“atmosphere exchange of greenhouse gases. Global Change Biology, 2019, 25, 2205-2208.	9.5	22
17	A profile of 70 years of soil research. European Journal of Soil Science, 2018, 69, 21-22.	3.9	0
18	Pore-Scale Monitoring of the Effect of Microarchitecture on Fungal Growth in a Two-Dimensional Soil-Like Micromodel. Frontiers in Environmental Science, 2018, 6, .	3.3	39

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19	Control of Pore Geometry in Soil Microcosms and Its Effect on the Growth and Spread of Pseudomonas and Bacillus sp.. Frontiers in Environmental Science, 2018, 6, .	3.3	23
20	Emergent Properties of Microbial Activity in Heterogeneous Soil Microenvironments: Different Research Approaches Are Slowly Converging, Yet Major Challenges Remain. Frontiers in Microbiology, 2018, 9, 1929.	3.5	168
21	Microscale Heterogeneity of the Spatial Distribution of Organic Matter Can Promote Bacterial Biodiversity in Soils: Insights From Computer Simulations. Frontiers in Microbiology, 2018, 9, 1583.	3.5	60
22	Quantification of the pore size distribution of soils: Assessment of existing software using tomographic and synthetic 3D images. Geoderma, 2017, 299, 73-82.	5.1	63
23	Rainfall infiltration and soil hydrological characteristics below ancient forest, planted forest and grassland in a temperate northern climate. Ecohydrology, 2016, 9, 585-600.	2.4	36
24	Challenges in imaging and predictive modeling of rhizosphere processes. Plant and Soil, 2016, 407, 9-38.	3.7	76
25	Analysis of physical pore space characteristics of two pyrolytic biochars and potential as microhabitat. Plant and Soil, 2016, 408, 357-368.	3.7	39
26	Microscale Heterogeneity Explains Experimental Variability and Non-Linearity in Soil Organic Matter Mineralisation. PLoS ONE, 2015, 10, e0123774.	2.5	62
27	Three-Dimensional Mapping of Soil Chemical Characteristics at Micrometric Scale by Combining 2D SEM-EDX Data and 3D X-Ray CT Images. PLoS ONE, 2015, 10, e0137205.	2.5	59
28	Challenges and opportunities for quantifying roots and rhizosphere interactions through imaging and image analysis. Plant, Cell and Environment, 2015, 38, 1213-1232.	5.7	117
29	Toward Modeling the Resistance and Resilience of â€œBelow-groundâ€•Fungal Communities. Advances in Applied Microbiology, 2015, 93, 1-44.	2.4	7
30	Simulating microbial degradation of organic matter in a simple porous system using the 3-D diffusion-based model MOSAIC. Biogeosciences, 2014, 11, 2201-2209.	3.3	44
31	Transparent soil microcosms allow 3D spatial quantification of soil microbiological processesin vivo. Plant Signaling and Behavior, 2014, 9, e970421.	2.4	37
32	All-optical photoacoustic imaging and detection of early-stage dental caries. , 2014, , .		6
33	Research Efforts Involving Several Disciplines: Adherence to a Clear Nomenclature Is Needed. Water, Air, and Soil Pollution, 2014, 225, 1.	2.4	19
34	Effects of different soil structures on the decomposition of native andÂadded organic carbon. European Journal of Soil Biology, 2013, 58, 81-90.	3.2	61
35	Percolation-Based Risk Index for Pathogen Invasion: Application to Soilborne Disease in Propagation Systems. Phytopathology, 2013, 103, 1012-1019.	2.2	9
36	Effect of scanning and image reconstruction settings in X-ray computed microtomography on quality and segmentation of 3D soil images. Geoderma, 2013, 207-208, 154-165.	5.1	77

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37	Adaptive-window indicator kriging: A thresholding method for computed tomography images of porous media. Computers and Geosciences, 2013, 54, 239-248.	4.2	55
38	The role of the natural environment in the emergence of antibiotic resistance in Gram-negative bacteria. Lancet Infectious Diseases, The, 2013, 13, 155-165.	9.1	839
39	Soil fungal dynamics: Parameterisation and sensitivity analysis of modelled physiological processes, soil architecture and carbon distribution. Ecological Modelling, 2013, 248, 165-173.	2.5	20
40	New Local Thresholding Method for Soil Images by Minimizing Grayscale Intraâ€Class Variance. Vadose Zone Journal, 2013, 12, 1-13.	2.2	44
41	Biophysics of the Vadose Zone: From Reality to Model Systems and Back Again. Vadose Zone Journal, 2013, 12, 1-17.	2.2	47
42	Applications of percolation theory to fungal spread with synergy. Journal of the Royal Society Interface, 2012, 9, 949-956.	3.4	34
43	Prominent Effect of Soil Network Heterogeneity on Microbial Invasion. Physical Review Letters, 2012, 109, 098102.	7.8	31
44	Emergent Behavior of Soil Fungal Dynamics. Soil Science, 2012, 177, 111-119.	0.9	61
45	Estimating rootâ€“soil contact from 3D Xâ€ray microtomographs. European Journal of Soil Science, 2012, 63, 776-786.	3.9	55
46	Transparent Soil for Imaging the Rhizosphere. PLoS ONE, 2012, 7, e44276.	2.5	156
47	Combining X-ray CT and 3D printing technology to produce microcosms with replicable, complex pore geometries. Soil Biology and Biochemistry, 2012, 51, 53-55.	8.8	67
48	Automated statistical method to align 2D chemical maps with 3D X-ray computed micro-tomographic images of soils. Geoderma, 2011, 164, 146-154.	5.1	45
49	Preface "Modeling soil system: complexity under your feet". Biogeosciences, 2011, 8, 3139-3142.	3.3	7
50	Fungal colonization in soils with different management histories: modeling growth in three-dimensional pore volumes. , 2011, 21, 1202-1210.		36
51	Earthwormâ€induced N mineralization in fertilized grassland increases both N₂O emission and cropâ€N uptake. European Journal of Soil Science, 2011, 62, 152-161.	3.9	70
52	Environmental modification and niche construction: developing O2 gradients drive the evolution of the Wrinkly Spreader. ISME Journal, 2011, 5, 665-673.	9.8	45
53	From Dust Bowl to Dust Bowl: Soils are Still Very Much a Frontier of Science. Soil Science Society of America Journal, 2011, 75, 2037-2048.	2.2	79
54	The Effect of Heterogeneity on Invasion in Spatial Epidemics: From Theory to Experimental Evidence in a Model System. PLoS Computational Biology, 2011, 7, e1002174.	3.2	30

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55	Modelling and quantifying the effect of heterogeneity in soil physical conditions on fungal growth. Biogeosciences, 2010, 7, 3731-3740.	3.3	45
56	Observer-dependent variability of the thresholding step in the quantitative analysis of soil images and X-ray microtomography data. Geoderma, 2010, 157, 51-63.	5.1	151
57	The Impact of Land-Use Practices on Soil Microbes. , 2010, , 273-295.		3
58	A Handbook of Tropical Soil Biology. Sampling and Characterization of Below-ground Biodiversity. By F. M. S. Moreira, E. J. Huising and D. E. Bignell. London: Earthscan (2008), pp. 218, Â£29.95 (paperback). ISBN 978-1-84407-593-5.. Experimental Agriculture, 2009, 45, 373-373.	0.9	0
59	Biologica invasion in soil: Complex network analysis. , 2009, , .		2
60	A fungal growth model fitted to carbonâ€limited dynamics of Rhizoctonia solani. New Phytologist, 2008, 178, 625-633.	7.3	21
61	Chapter 4 Microbial Distribution in Soils. Advances in Agronomy, 2008, 100, 81-121.	5.2	166
62	The Rhizosphere: An Ecological Perspective. Edited by Z. G. Cardon and J. L. Whitbeck. Burlington, MA, USA: Elsevier Academic Press (2007), pp. 212, Â£37.99. ISBN -10: 0-12-088775-0-4: ISBN-13: 978-0-12-088775-0.. Experimental Agriculture, 2008, 44, 437-437.	0.9	1
63	Estimation of multiple transmission rates for epidemics in heterogeneous populations. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 20392-20397.	7.1	55
64	Soil structure and soil-borne diseases: using epidemiological concepts to scale from fungal spread to plant epidemics. European Journal of Soil Science, 2006, 57, 26-37.	3.9	45
65	Bayesian estimation for percolation models of disease spread in plant populations. Statistics and Computing, 2006, 16, 391-402.	1.5	38
66	DAMPING-OFF EPIDEMICS, CONTACT STRUCTURE, AND DISEASE TRANSMISSION IN MIXED-SPECIES POPULATIONS. Ecology, 2005, 86, 1948-1957.	3.2	21
67	Empirical evidence of spatial thresholds to control invasion of fungal parasites and saprotrophs. New Phytologist, 2004, 163, 125-132.	7.3	61
68	An empirical method to estimate the effect of soil on the rate for transmission of dampingâ€off disease. New Phytologist, 2004, 162, 231-238.	7.3	12
69	Preferential spread of the pathogenic fungus Rhizoctonia solani through structured soil. Soil Biology and Biochemistry, 2004, 36, 203-210.	8.8	39
70	Inferring the dynamics of a spatial epidemic from time-series data. Bulletin of Mathematical Biology, 2004, 66, 373-391.	1.9	16
71	Effect of bulk density on the spatial organisation of the fungus Rhizoctonia solani in soil. FEMS Microbiology Ecology, 2003, 44, 45-56.	2.7	100
72	QUANTIFICATION AND ANALYSIS OF TRANSMISSION RATES FOR SOILBORNE EPIDEMICS. Ecology, 2003, 84, 3232-3239.	3.2	37

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73	In situ visualisation of fungi in soil thin sections: problems with crystallisation of the fluorochrome FB 28 (Calcofluor M2R) and improved staining by SCRI Renaissance 2200. Mycological Research, 2002, 106, 293-297.	2.5	22
74	Soil physics, fungal epidemiology and the spread of Rhizoctonia solani. New Phytologist, 2001, 151, 459-468.	7.3	88
75	Saprotrophic invasion by the soilâ€borne fungal plant pathogen Rhizoctonia solani and percolation thresholds. New Phytologist, 2000, 146, 535-544.	7.3	96
76	Method to Quantify Shortâ€Term Dynamics in Carbon Dioxide Emission Following Controlled Soil Deformation. Soil Science Society of America Journal, 2000, 64, 1740-1748.	2.2	6
77	Continuity of air-filled pores and invasion thresholds for a soil-borne fungal plant pathogen, Rhizoctonia solani. Soil Biology and Biochemistry, 1999, 31, 1803-1810.	8.8	58
78	Effect of physical conditions on the spatial and temporal dynamics of the soil-borne fungal pathogen Rhizoctonia solani. New Phytologist, 1998, 138, 629-637.	7.3	40
79	Quantification of Fungal Antigens in Soil with a Monoclonal Antibody-Based ELISA: Analysis and Reduction of Soil-Specific Bias. Phytopathology, 1997, 87, 730-736.	2.2	28