

Carsten W Mueller

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

116
papers

2,998
citations

34
h-index

50
g-index

152
ext. papers

4,223
ext. citations

6.4
avg, IF

5.56
L-index

#	Paper	IF	Citations
116	Submicron structures provide preferential spots for carbon and nitrogen sequestration in soils. <i>Nature Communications</i> , 2014 , 5, 2947	17.4	220
115	Emergent Properties of Microbial Activity in Heterogeneous Soil Microenvironments: Different Research Approaches Are Slowly Converging, Yet Major Challenges Remain. <i>Frontiers in Microbiology</i> , 2018 , 9, 1929	5.7	110
114	Soil organic carbon stocks in topsoil and subsoil controlled by parent material, carbon input in the rhizosphere, and microbial-derived compounds. <i>Soil Biology and Biochemistry</i> , 2018 , 122, 19-30	7.5	109
113	Aggregate stability and physical protection of soil organic carbon in semi-arid steppe soils. <i>European Journal of Soil Science</i> , 2012 , 63, 22-31	3.4	85
112	Aggregation controls the stability of lignin and lipids in clay-sized particulate and mineral associated organic matter. <i>Biogeochemistry</i> , 2017 , 132, 307-324	3.8	77
111	STXM and NanoSIMS investigations on EPS fractions before and after adsorption to goethite. <i>Environmental Science & Technology</i> , 2013 , 47, 3158-66	10.3	74
110	Submicron scale imaging of soil organic matter dynamics using NanoSIMS [From single particles to intact aggregates. <i>Organic Geochemistry</i> , 2012 , 42, 1476-1488	3.1	72
109	Soil organic carbon stocks, distribution, and composition affected by historic land use changes on adjacent sites. <i>Biology and Fertility of Soils</i> , 2009 , 45, 347-359	6.1	70
108	Root Exudates Induce Soil Macroaggregation Facilitated by Fungi in Subsoil. <i>Frontiers in Environmental Science</i> , 2018 , 6,	4.8	66
107	Large amounts of labile organic carbon in permafrost soils of northern Alaska. <i>Global Change Biology</i> , 2015 , 21, 2804-2817	11.4	64
106	Organic matter composition and stabilization in a polygonal tundra soil of the Lena Delta. <i>Biogeosciences</i> , 2013 , 10, 3145-3158	4.6	60
105	Effect of in-situ aged and fresh biochar on soil hydraulic conditions and microbial C use under drought conditions. <i>Scientific Reports</i> , 2018 , 8, 6852	4.9	58
104	Nitrogen-rich microbial products provide new organo-mineral associations for the stabilization of soil organic matter. <i>Global Change Biology</i> , 2018 , 24, 1762-1770	11.4	58
103	Advances in the Analysis of Biogeochemical Interfaces. <i>Advances in Agronomy</i> , 2013 , 1-46	7.7	57
102	Spatial distribution and chemical composition of soil organic matter fractions in rhizosphere and non-rhizosphere soil under European beech (<i>Fagus sylvatica</i> L.). <i>Geoderma</i> , 2016 , 264, 179-187	6.7	56
101	Root exudation patterns in a beech forest: Dependence on soil depth, root morphology, and environment. <i>Soil Biology and Biochemistry</i> , 2017 , 107, 188-197	7.5	53
100	Tracing the sources and spatial distribution of organic carbon in subsoils using a multi-biomarker approach. <i>Scientific Reports</i> , 2016 , 6, 29478	4.9	53

99	Long-term stabilization of deep soil carbon by fire and burial during early Holocene climate change. <i>Nature Geoscience</i> , 2014 , 7, 428-432	18.3	53
98	Soil organic carbon stability in forests: Distinct effects of tree species identity and traits. <i>Global Change Biology</i> , 2018 , 25, 1529	11.4	53
97	Multiple exchange processes on mineral surfaces control the transport of dissolved organic matter through soil profiles. <i>Soil Biology and Biochemistry</i> , 2018 , 118, 79-90	7.5	52
96	Stabilization of soil organic matter by earthworms is connected with physical protection rather than with chemical changes of organic matter. <i>Geoderma</i> , 2017 , 289, 29-35	6.7	52
95	Linking 3D Soil Structure and Plant-Microbe-Soil Carbon Transfer in the Rhizosphere. <i>Frontiers in Environmental Science</i> , 2018 , 6,	4.8	51
94	Synergies between mycorrhizal fungi and soil microbial communities increase plant nitrogen acquisition. <i>Communications Biology</i> , 2019 , 2, 233	6.7	49
93	Decoupled carbon and nitrogen mineralization in soil particle size fractions of a forest topsoil. <i>Soil Biology and Biochemistry</i> , 2014 , 78, 263-273	7.5	47
92	NanoSIMS as a tool for characterizing soil model compounds and organomineral associations in artificial soils. <i>Journal of Soils and Sediments</i> , 2012 , 12, 35-47	3.4	45
91	The fate of cutin and suberin of decaying leaves, needles and roots ¶Inferences from the initial decomposition of bound fatty acids. <i>Organic Geochemistry</i> , 2016 , 95, 81-92	3.1	42
90	Pedogenic and microbial interrelations to regional climate and local topography: New insights from a climate gradient (arid to humid) along the Coastal Cordillera of Chile. <i>Catena</i> , 2018 , 170, 335-355	5.8	42
89	Properties and bioavailability of particulate and mineral-associated organic matter in Arctic permafrost soils, Lower Kolyma Region, Russia. <i>European Journal of Soil Science</i> , 2015 , 66, 722-734	3.4	42
88	Soil organic matter is stabilized by organo-mineral associations through two key processes: The role of the carbon to nitrogen ratio. <i>Geoderma</i> , 2020 , 357, 113974	6.7	42
87	Alteration of rocks by endolithic organisms is one of the pathways for the beginning of soils on Earth. <i>Scientific Reports</i> , 2018 , 8, 3367	4.9	40
86	Correlative Imaging Reveals Holistic View of Soil Microenvironments. <i>Environmental Science & Technology</i> , 2019 , 53, 829-837	10.3	39
85	Identification of Distinct Functional Microstructural Domains Controlling C Storage in Soil. <i>Environmental Science & Technology</i> , 2017 , 51, 12182-12189	10.3	36
84	Micro-scale heterogeneity of soil phosphorus depends on soil substrate and depth. <i>Scientific Reports</i> , 2017 , 7, 3203	4.9	36
83	Bioavailability and isotopic composition of CO ₂ released from incubated soil organic matter fractions. <i>Soil Biology and Biochemistry</i> , 2014 , 69, 168-178	7.5	35
82	Microscale soil structures foster organic matter stabilization in permafrost soils. <i>Geoderma</i> , 2017 , 293, 44-53	6.7	33

81	Earthworms act as biochemical reactors to convert labile plant compounds into stabilized soil microbial necromass. <i>Communications Biology</i> , 2019 , 2, 441	6.7	33
80	Growth and physiology of olive pioneer and fibrous roots exposed to soil moisture deficits. <i>Tree Physiology</i> , 2011 , 31, 1228-37	4.2	31
79	Rapid soil formation after glacial retreat shaped by spatial patterns of organic matter accrual in microaggregates. <i>Global Change Biology</i> , 2018 , 24, 1637-1650	11.4	31
78	Particulate organic matter as a functional soil component for persistent soil organic carbon. <i>Nature Communications</i> , 2021 , 12, 4115	17.4	31
77	Soil Aggregate Destruction by Ultrasonication Increases Soil Organic Matter Mineralization and Mobility. <i>Soil Science Society of America Journal</i> , 2012 , 76, 1634-1643	2.5	29
76	Initial differentiation of vertical soil organic matter distribution and composition under juvenile beech (<i>Fagus sylvatica</i> L.) trees. <i>Plant and Soil</i> , 2009 , 323, 111-123	4.2	28
75	Iron mineral dissolution releases iron and associated organic carbon during permafrost thaw. <i>Nature Communications</i> , 2020 , 11, 6329	17.4	25
74	Active layer monitoring at CALM-S site near J.G.Mendel Station, James Ross Island, eastern Antarctic Peninsula. <i>Science of the Total Environment</i> , 2017 , 601-602, 987-997	10.2	24
73	Potential denitrification stimulated by water-soluble organic carbon from plant residues during initial decomposition. <i>Soil Biology and Biochemistry</i> , 2020 , 147, 107841	7.5	22
72	A multi-technique approach to assess the fate of biochar in soil and to quantify its effect on soil organic matter composition. <i>Organic Geochemistry</i> , 2017 , 112, 177-186	3.1	22
71	Urban waste composts enhance OC and N stocks after long-term amendment but do not alter organic matter composition. <i>Agriculture, Ecosystems and Environment</i> , 2016 , 223, 211-222	5.7	22
70	Earthworm Cast Formation and Development: A Shift From Plant Litter to Mineral Associated Organic Matter. <i>Frontiers in Environmental Science</i> , 2019 , 7,	4.8	21
69	Phosphorus nutrition of <i>Populus trichocarpa</i> reflects adaptation to high P-availability in the soil. <i>Tree Physiology</i> , 2018 , 38, 6-24	4.2	21
68	Pyrogenic Carbon Contributes Substantially to Carbon Storage in Intact and Degraded Northern Peatlands. <i>Land Degradation and Development</i> , 2018 , 29, 2082-2091	4.4	21
67	Substitution of mineral fertilizers with biogas digestate plus biochar increases physically stabilized soil carbon but not crop biomass in a field trial. <i>Science of the Total Environment</i> , 2019 , 680, 181-189	10.2	19
66	Insights into Carbon Metabolism Provided by Fluorescence Hybridization-Secondary Ion Mass Spectrometry Imaging of an Autotrophic, Nitrate-Reducing, Fe(II)-Oxidizing Enrichment Culture. <i>Applied and Environmental Microbiology</i> , 2018 , 84,	4.8	19
65	What controls the concentration of various aliphatic lipids in soil?. <i>Soil Biology and Biochemistry</i> , 2013 , 63, 14-17	7.5	19
64	Quantification of Hortonian overland flow generation and soil erosion in a Central European low mountain range using rainfall experiments. <i>Catena</i> , 2014 , 113, 202-212	5.8	17

63	Subsoil organo-mineral associations under contrasting climate conditions. <i>Geochimica Et Cosmochimica Acta</i> , 2020 , 270, 244-263	5.5	17
62	Detritivore conversion of litter into faeces accelerates organic matter turnover. <i>Communications Biology</i> , 2020 , 3, 660	6.7	17
61	Fungi and bacteria respond differently to changing environmental conditions within a soil profile. <i>Soil Biology and Biochemistry</i> , 2019 , 137, 107543	7.5	16
60	A de novo-designed antimicrobial peptide with activity against multiresistant <i>Staphylococcus aureus</i> acting on RsbW kinase. <i>FASEB Journal</i> , 2013 , 27, 4476-88	0.9	16
59	Carbonate ooids of the Mesoarchaeon Pongola Supergroup, South Africa. <i>Geobiology</i> , 2017 , 15, 750-766	4.3	16
58	Site conditions and vegetation determine phosphorus and sulfur speciation in soils of Antarctica. <i>Geochimica Et Cosmochimica Acta</i> , 2019 , 246, 339-362	5.5	15
57	Soil texture affects the coupling of litter decomposition and soil organic matter formation. <i>Soil Biology and Biochemistry</i> , 2021 , 159, 108302	7.5	15
56	Differences in labile soil organic matter explain potential denitrification and denitrifying communities in a long-term fertilization experiment. <i>Applied Soil Ecology</i> , 2020 , 153, 103630	5	13
55	Archaeal and bacterial communities across a chronosequence of drained lake basins in Arctic Alaska. <i>Scientific Reports</i> , 2015 , 5, 18165	4.9	13
54	Analysing the role of soil properties, initial biomass and ozone on observed plant growth variability in a lysimeter study. <i>Plant and Soil</i> , 2009 , 323, 125-141	4.2	13
53	From fibrous plant residues to mineral-associated organic carbon – the fate of organic matter in Arctic permafrost soils. <i>Biogeosciences</i> , 2020 , 17, 3367-3383	4.6	12
52	Methods for visualising active microbial benzene degraders in in situ microcosms. <i>Applied Microbiology and Biotechnology</i> , 2015 , 99, 957-68	5.7	11
51	Fast accrual of C and N in soil organic matter fractions following post-mining reclamation across the USA. <i>Journal of Environmental Management</i> , 2018 , 209, 216-226	7.9	11
50	Iron oxides and aluminous clays selectively control soil carbon storage and stability in the humid tropics. <i>Scientific Reports</i> , 2021 , 11, 5076	4.9	11
49	Towards the co-ordination of terrestrial ecosystem protocols across European research infrastructures. <i>Ecology and Evolution</i> , 2017 , 7, 3967-3975	2.8	9
48	Stable-isotope Raman microspectroscopy for the analysis of soil organic matter. <i>Analytical and Bioanalytical Chemistry</i> , 2018 , 410, 923-931	4.4	9
47	CO and carbonate as substrate for the activation of the microbial community in 180 m deep bedrock fracture fluid of Outokumpu Deep Drill Hole, Finland. <i>AIMS Microbiology</i> , 2017 , 3, 846-871	4.5	9
46	Relative effects of climate and litter traits on decomposition change with time, climate and trait variability. <i>Journal of Ecology</i> , 2021 , 109, 447-458	6	9

45	Visualizing the transfer of organic matter from decaying plant residues to soil mineral surfaces controlled by microorganisms. <i>Soil Biology and Biochemistry</i> , 2021 , 160, 108347	7.5	9
44	Pedogenic and microbial interrelation in initial soils under semiarid climate on James Ross Island, Antarctic Peninsula region. <i>Biogeosciences</i> , 2019 , 16, 2481-2499	4.6	8
43	Novel Sample Preparation Technique To Improve Spectromicroscopic Analyses of Micrometer-Sized Particles. <i>Environmental Science & Technology</i> , 2015 , 49, 9874-80	10.3	8
42	Enhanced ozone exposure of European beech (<i>Fagus sylvatica</i>) stimulates nitrogen mobilization from leaf litter and nitrogen accumulation in the soil. <i>Plant Biosystems</i> , 2010 , 144, 537-546	1.6	8
41	Effects of land-use change on chemical composition of soil organic matter in tropical lowland Bolivia. <i>Grassland Science</i> , 2009 , 55, 104-109	1.3	8
40	Dark microbial CO fixation in temperate forest soils increases with CO concentration. <i>Global Change Biology</i> , 2020 , 26, 1926-1935	11.4	8
39	Anaerobic Neutrophilic Pyrite Oxidation by a Chemolithoautotrophic Nitrate-Reducing Iron(II)-Oxidizing Culture Enriched from a Fractured Aquifer. <i>Environmental Science & Technology</i> , 2021 , 55, 9876-9884	10.3	8
38	Comparing the physiochemical parameters of three celluloses reveals new insights into substrate suitability for fungal enzyme production. <i>Fungal Biology and Biotechnology</i> , 2017 , 4, 10	7.5	7
37	Ensuring planetary survival: the centrality of organic carbon in balancing the multifunctional nature of soils. <i>Critical Reviews in Environmental Science and Technology</i> , 1-17	11.1	7
36	Pterodactyloid pterosaur bones from Cretaceous deposits of the Antarctic Peninsula. <i>Anais Da Academia Brasileira De Ciencias</i> , 2019 , 91, e20191300	1.4	7
35	Biogeochemical cycling of phosphorus in subsoils of temperate forest ecosystems. <i>Biogeochemistry</i> , 2020 , 150, 313-328	3.8	7
34	Legacy of Rice Roots as Encoded in Distinctive Microsites of Oxides, Silicates, and Organic Matter 2017 , 1, 2		6
33	A review of the importance of mineral nitrogen cycling in the plant-soil-microbe system of permafrost-affected soils—changing the paradigm. <i>Environmental Research Letters</i> , 2022 , 17, 013004	6.2	6
32	Organic matter composition and stabilization in a polygonal tundra soil of the Lena-Delta		6
31	Permafrost and active layer research on James Ross Island: An overview. <i>Czech Polar Reports</i> , 2019 , 9, 20-36	0.8	6
30	Replicability of aggregate disruption by sonication—in inter-laboratory test using three different soils from Germany. <i>Journal of Plant Nutrition and Soil Science</i> , 2018 , 181, 894-904	2.3	6
29	Root-induced fungal growth triggers macroaggregation in forest subsoils. <i>Soil Biology and Biochemistry</i> , 2021 , 157, 108244	7.5	5
28	4D Surface Reconstructions to Study Microscale Structures and Functions in Soil Biogeochemistry. <i>Environmental Science & Technology</i> , 2021 , 55, 9384-9393	10.3	5

27	Soil Organic Matter and Phosphate Sorption on Natural and Synthetic Fe Oxides under in Situ Conditions. <i>Environmental Science & Technology</i> , 2019 , 53, 13081-13087	10.3	4
26	Performance of base hydrolysis methods in extracting bound lipids from plant material, soils, and sediments. <i>Organic Geochemistry</i> , 2017 , 113, 97-104	3.1	4
25	Permafrost soil complexity evaluated by laboratory imaging Vis-NIR spectroscopy. <i>European Journal of Soil Science</i> , 2021 , 72, 114-119	3.4	4
24	Probing the nature of soil organic matter. <i>Critical Reviews in Environmental Science and Technology</i> ,1-22	11.1	4
23	The role of clay content and mineral surface area for soil organic carbon storage in an arable toposequence. <i>Biogeochemistry</i> , 2021 , 156, 401	3.8	4
22	Andosol clay re-aggregation observed at the microscale during physical organic matter fractionation. <i>Journal of Plant Nutrition and Soil Science</i> , 2019 , 182, 145-148	2.3	3
21	High resistance of soils to short-term re-grazing in a long-term abandoned alpine pasture. <i>Agriculture, Ecosystems and Environment</i> , 2020 , 300, 107008	5.7	3
20	Characterization of Biogeochemical Processes at the Microscale 2017 , 193-212		3
19	How vegetation patches drive soil development and organic matter formation on polar islands. <i>Geoderma Regional</i> , 2021 , 27, e00429	2.7	3
18	Microscale carbon distribution around pores and particulate organic matter varies with soil moisture regime.. <i>Nature Communications</i> , 2022 , 13, 2098	17.4	3
17	Combination of energy limitation and sorption capacity explains 14C depth gradients. <i>Soil Biology and Biochemistry</i> , 2020 , 148, 107912	7.5	2
16	Imaging of Al/Fe ratios in synthetic Al-goethite revealed by nanoscale secondary ion mass spectrometry. <i>Rapid Communications in Mass Spectrometry</i> , 2018 , 32, 619-628	2.2	2
15	Linking rhizosphere processes across scales: Opinion. <i>Plant and Soil</i> ,1	4.2	2
14	From fibrous plant residues to mineral-associated organic carbon –the fate of organic matter in Arctic permafrost soils		2
13	Association of fresh low-molecular-weight organic compounds with clay-sized mineral fraction in soils of different organic carbon loading. <i>Geoderma</i> , 2022 , 409, 115657	6.7	2
12	Which are important soil parameters influencing the spatial heterogeneity of ¹⁴C in soil organic matter?		2
11	Supplementary material to “Which are important soil parameters influencing the spatial heterogeneity of ¹⁴C in soil organic matter?”		2
10	Geogenic organic carbon in terrestrial sediments and its contribution to total soil carbon. <i>Soil</i> , 2021 , 7, 347-362	5.8	2

9	Collecting in situ precipitated iron oxides in their natural soil environment. <i>Journal of Plant Nutrition and Soil Science</i> , 2013 , 176, 497-499	2.3	1
8	Methods for assessing laterally-resolved distribution, speciation and bioavailability of phosphorus in soils. <i>Reviews in Environmental Science and Biotechnology</i> , 2022 , 21, 53-74	13.9	1
7	Functional complexity explains the depth-dependent response of organic matter to liming at the nanometer scale. <i>Geoderma</i> , 2022 , 408, 115560	6.7	1
6	Forest litter constraints on the pathways controlling soil organic matter formation. <i>Soil Biology and Biochemistry</i> , 2021 , 163, 108447	7.5	1
5	Contribution of Particulate and Mineral-Associated Organic Matter to Potential Denitrification of Agricultural Soils. <i>Frontiers in Environmental Science</i> , 9,	4.8	1
4	Stable isotopes reveal that fungal residues contribute more to mineral-associated organic matter pools than plant residues. <i>Soil Biology and Biochemistry</i> , 2022 , 168, 108634	7.5	1
3	River Organic Carbon Fluxes Modulated by Hydrodynamic Sorting of Particulate Organic Matter. <i>Geophysical Research Letters</i> , 2022 , 49,	4.9	0
2	Cryoturbation impacts iron-organic carbon associations along a permafrost soil chronosequence in northern Alaska. <i>Geoderma</i> , 2022 , 413, 115738	6.7	0
1	Bypass and hyperbole in soil science: A perspective from the next generation of soil scientists. <i>European Journal of Soil Science</i> , 2021 , 72, 31-34	3.4	