Carsten W Mueller

List of Publications by Year in Descending Order

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	Methods for assessing laterally-resolved distribution, speciation and bioavailability of phosphorus in soils. *Reviews in Environmental Science and Biotechnology*, **2022**, 21, 53-74	13.9	1
115	River Organic Carbon Fluxes Modulated by Hydrodynamic Sorting of Particulate Organic Matter. *Geophysical Research Letters*, **2022**, 49,	4.9	0
114	Cryoturbation impacts iron-organic carbon associations along a permafrost soil chronosequence in northern Alaska. *Geoderma*, **2022**, 413, 115738	6.7	0
113	Functional complexity explains the depth-dependent response of organic matter to liming at the nanometer scale. *Geoderma*, **2022**, 408, 115560	6.7	1
112	A review of the importance of mineral nitrogen cycling in the plant-soil-microbe system of permafrost-affected soils□hanging the paradigm. *Environmental Research Letters*, **2022**, 17, 013004	6.2	6
111	Association of fresh low-molecular-weight organic compounds with clay-sized mineral fraction in soils of different organic carbon loading. *Geoderma*, **2022**, 409, 115657	6.7	2
110	Stable isotopes reveal that fungal residues contribute more to mineral-associated organic matter pools than plant residues. *Soil Biology and Biochemistry*, **2022**, 168, 108634	7.5	1
109	Microscale carbon distribution around pores and particulate organic matter varies with soil moisture regime.. *Nature Communications*, **2022**, 13, 2098	17.4	3
108	Bypass and hyperbole in soil science: A perspective from the next generation of soil scientists. *European Journal of Soil Science*, **2021**, 72, 31-34	3.4	
107	Forest litter constraints on the pathways controlling soil organic matter formation. *Soil Biology and Biochemistry*, **2021**, 163, 108447	7.5	1
106	Iron oxides and aluminous clays selectively control soil carbon storage and stability in the humid tropics. *Scientific Reports*, **2021**, 11, 5076	4.9	11
105	Root-induced fungal growth triggers macroaggregation in forest subsoils. *Soil Biology and Biochemistry*, **2021**, 157, 108244	7.5	5
104	4D Surface Reconstructions to Study Microscale Structures and Functions in Soil Biogeochemistry. *Environmental Science & Technology*, **2021**, 55, 9384-9393	10.3	5
103	Relative effects of climate and litter traits on decomposition change with time, climate and trait variability. *Journal of Ecology*, **2021**, 109, 447-458	6	9
102	Permafrost soil complexity evaluated by laboratory imaging Vis-NIR spectroscopy. *European Journal of Soil Science*, **2021**, 72, 114-119	3.4	4
101	Particulate organic matter as a functional soil component for persistent soil organic carbon. *Nature Communications*, **2021**, 12, 4115	17.4	31
100	Geogenic organic carbon in terrestrial sediments and its contribution to total soil carbon. *Soil*, **2021**, 7, 347-362	5.8	2

99	Anaerobic Neutrophilic Pyrite Oxidation by a Chemolithoautotrophic Nitrate-Reducing Iron(II)-Oxidizing Culture Enriched from a Fractured Aquifer. *Environmental Science & Technology*, **2021**, 55, 9876-9884	10.3	8
98	Soil texture affects the coupling of litter decomposition and soil organic matter formation. *Soil Biology and Biochemistry*, **2021**, 159, 108302	7.5	15
97	Visualizing the transfer of organic matter from decaying plant residues to soil mineral surfaces controlled by microorganisms. *Soil Biology and Biochemistry*, **2021**, 160, 108347	7.5	9
96	The role of clay content and mineral surface area for soil organic carbon storage in an arable toposequence. *Biogeochemistry*, **2021**, 156, 401	3.8	4
95	How vegetation patches drive soil development and organic matter formation on polar islands. *Geoderma Regional*, **2021**, 27, e00429	2.7	3
94	Iron mineral dissolution releases iron and associated organic carbon during permafrost thaw. *Nature Communications*, **2020**, 11, 6329	17.4	25
93	Potential denitrification stimulated by water-soluble organic carbon from plant residues during initial decomposition. *Soil Biology and Biochemistry*, **2020**, 147, 107841	7.5	22
92	High resistance of soils to short-term re-grazing in a long-term abandoned alpine pasture. *Agriculture, Ecosystems and Environment*, **2020**, 300, 107008	5.7	3
91	Combination of energy limitation and sorption capacity explains 14C depth gradients. *Soil Biology and Biochemistry*, **2020**, 148, 107912	7.5	2
90	Differences in labile soil organic matter explain potential denitrification and denitrifying communities in a long-term fertilization experiment. *Applied Soil Ecology*, **2020**, 153, 103630	5	13
89	From fibrous plant residues to mineral-associated organic carbon The fate of organic matter in Arctic permafrost soils. *Biogeosciences*, **2020**, 17, 3367-3383	4.6	12
88	Subsoil organo-mineral associations under contrasting climate conditions. *Geochimica Et Cosmochimica Acta*, **2020**, 270, 244-263	5.5	17
87	Dark microbial CO fixation in temperate forest soils increases with CO concentration. *Global Change Biology*, **2020**, 26, 1926-1935	11.4	8
86	Detritivore conversion of litter into faeces accelerates organic matter turnover. *Communications Biology*, **2020**, 3, 660	6.7	17
85	Biogeochemical cycling of phosphorus in subsoils of temperate forest ecosystems. *Biogeochemistry* , **2020**, 150, 313-328	3.8	7
84	Soil organic matter is stabilized by organo-mineral associations through two key processes: The role of the carbon to nitrogen ratio. *Geoderma*, **2020**, 357, 113974	6.7	42
83	Pedogenic and microbial interrelation in initial soils under semiarid climate on James Ross Island, Antarctic Peninsula region. *Biogeosciences*, **2019**, 16, 2481-2499	4.6	8
82	Synergies between mycorrhizal fungi and soil microbial communities increase plant nitrogen acquisition. *Communications Biology*, **2019**, 2, 233	6.7	49

81	Substitution of mineral fertilizers with biogas digestate plus biochar increases physically stabilized soil carbon but not crop biomass in a field trial. *Science of the Total Environment*, **2019**, 680, 181-189	10.2	19
80	Earthworm Cast Formation and Development: A Shift From Plant Litter to Mineral Associated Organic Matter. *Frontiers in Environmental Science*, **2019**, 7,	4.8	21
79	Andosol clay re-aggregation observed at the microscale during physical organic matter fractionation. *Journal of Plant Nutrition and Soil Science*, **2019**, 182, 145-148	2.3	3
78	Fungi and bacteria respond differently to changing environmental conditions within a soil profile. *Soil Biology and Biochemistry*, **2019**, 137, 107543	7.5	16
77	Soil Organic Matter and Phosphate Sorption on Natural and Synthetic Fe Oxides under in Situ Conditions. *Environmental Science & Technology*, **2019**, 53, 13081-13087	10.3	4
76	Pterodactyloid pterosaur bones from Cretaceous deposits of the Antarctic Peninsula. *Anais Da Academia Brasileira De Ciencias*, **2019**, 91, e20191300	1.4	7
75	Permafrost and active layer research on James Ross Island: An overview. *Czech Polar Reports*, **2019**, 9, 20-36	0.8	6
74	Earthworms act as biochemical reactors to convert labile plant compounds into stabilized soil microbial necromass. *Communications Biology*, **2019**, 2, 441	6.7	33
73	Correlative Imaging Reveals Holistic View of Soil Microenvironments. *Environmental Science & Technology*, **2019**, 53, 829-837	10.3	39
72	Site conditions and vegetation determine phosphorus and sulfur speciation in soils of Antarctica. *Geochimica Et Cosmochimica Acta*, **2019**, 246, 339-362	5.5	15
71	Alteration of rocks by endolithic organisms is one of the pathways for the beginning of soils on Earth. *Scientific Reports*, **2018**, 8, 3367	4.9	40
70	Imaging of Al/Fe ratios in synthetic Al-goethite revealed by nanoscale secondary ion mass spectrometry. *Rapid Communications in Mass Spectrometry*, **2018**, 32, 619-628	2.2	2
69	Insights into Carbon Metabolism Provided by Fluorescence Hybridization-Secondary Ion Mass Spectrometry Imaging of an Autotrophic, Nitrate-Reducing, Fe(II)-Oxidizing Enrichment Culture. *Applied and Environmental Microbiology*, **2018**, 84,	4.8	19
68	Soil organic carbon stocks in topsoil and subsoil controlled by parent material, carbon input in the rhizosphere, and microbial-derived compounds. *Soil Biology and Biochemistry*, **2018**, 122, 19-30	7.5	109
67	Multiple exchange processes on mineral surfaces control the transport of dissolved organic matter through soil profiles. *Soil Biology and Biochemistry*, **2018**, 118, 79-90	7.5	52
66	Fast accrual of C and N in soil organic matter fractions following post-mining reclamation across the USA. *Journal of Environmental Management*, **2018**, 209, 216-226	7.9	11
65	Effect of in-situ aged and fresh biochar on soil hydraulic conditions and microbial C use under drought conditions. *Scientific Reports*, **2018**, 8, 6852	4.9	58
64	Phosphorus nutrition of Populus □tanescens reflects adaptation to high P-availability in the soil. *Tree Physiology*, **2018**, 38, 6-24	4.2	21

63	Stable-isotope Raman microspectroscopy for the analysis of soil organic matter. *Analytical and Bioanalytical Chemistry*, **2018**, 410, 923-931	4.4	9
62	Pyrogenic Carbon Contributes Substantially to Carbon Storage in Intact and Degraded Northern Peatlands. *Land Degradation and Development*, **2018**, 29, 2082-2091	4.4	21
61	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. *Catena*, **2018**, 170, 335-355	5.8	42
60	Linking 3D Soil Structure and Plant-Microbe-Soil Carbon Transfer in the Rhizosphere. *Frontiers in Environmental Science*, **2018**, 6,	4.8	51
59	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	5.7	110
58	Soil organic carbon stability in forests: Distinct effects of tree species identity and traits. *Global Change Biology*, **2018**, 25, 1529	11.4	53
57	Nitrogen-rich microbial products provide new organo-mineral associations for the stabilization of soil organic matter. *Global Change Biology*, **2018**, 24, 1762-1770	11.4	58
56	Rapid soil formation after glacial retreat shaped by spatial patterns of organic matter accrual in microaggregates. *Global Change Biology*, **2018**, 24, 1637-1650	11.4	31
55	Root Exudates Induce Soil Macroaggregation Facilitated by Fungi in Subsoil. *Frontiers in Environmental Science*, **2018**, 6,	4.8	66
54	Replicability of aggregate disruption by sonication□n inter-laboratory test using three different soils from Germany. *Journal of Plant Nutrition and Soil Science*, **2018**, 181, 894-904	2.3	6
53	Microscale soil structures foster organic matter stabilization in permafrost soils. *Geoderma*, **2017**, 293, 44-53	6.7	33
52	Root exudation patterns in a beech forest: Dependence on soil depth, root morphology, and environment. *Soil Biology and Biochemistry*, **2017**, 107, 188-197	7.5	53
51	Aggregation controls the stability of lignin and lipids in clay-sized particulate and mineral associated organic matter. *Biogeochemistry*, **2017**, 132, 307-324	3.8	77
50	Towards the co-ordination of terrestrial ecosystem protocols across European research infrastructures. *Ecology and Evolution*, **2017**, 7, 3967-3975	2.8	9
49	Active layer monitoring at CALM-S site near J.G.Mendel Station, James Ross Island, eastern Antarctic Peninsula. *Science of the Total Environment*, **2017**, 601-602, 987-997	10.2	24
48	Identification of Distinct Functional Microstructural Domains Controlling C Storage in Soil. *Environmental Science & Technology*, **2017**, 51, 12182-12189	10.3	36
47	Comparing the physiochemical parameters of three celluloses reveals new insights into substrate suitability for fungal enzyme production. *Fungal Biology and Biotechnology*, **2017**, 4, 10	7.5	7
46	Performance of base hydrolysis methods in extracting bound lipids from plant material, soils, and sediments. *Organic Geochemistry*, **2017**, 113, 97-104	3.1	4

45	Carbonate ooids of the Mesoarchaean Pongola Supergroup, South Africa. *Geobiology*, **2017**, 15, 750-766	4.3	16
44	Micro-scale heterogeneity of soil phosphorus depends on soil substrate and depth. *Scientific Reports*, **2017**, 7, 3203	4.9	36
43	A multi-technique approach to assess the fate of biochar in soil and to quantify its effect on soil organic matter composition. *Organic Geochemistry*, **2017**, 112, 177-186	3.1	22
42	Stabilization of soil organic matter by earthworms is connected with physical protection rather than with chemical changes of organic matter. *Geoderma*, **2017**, 289, 29-35	6.7	52
41	Legacy of Rice Roots as Encoded in Distinctive Microsites of Oxides, Silicates, and Organic Matter **2017**, 1, 2		6
40	Characterization of Biogeochemical Processes at the Microscale **2017**, 193-212		3
39	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. *AIMS Microbiology*, **2017**, 3, 846-871	4.5	9
38	Tracing the sources and spatial distribution of organic carbon in subsoils using a multi-biomarker approach. *Scientific Reports*, **2016**, 6, 29478	4.9	53
37	The fate of cutin and suberin of decaying leaves, needles and roots Inferences from the initial decomposition of bound fatty acids. *Organic Geochemistry*, **2016**, 95, 81-92	3.1	42
36	Spatial distribution and chemical composition of soil organic matter fractions in rhizosphere and non-rhizosphere soil under European beech (Fagus sylvatica L.). *Geoderma*, **2016**, 264, 179-187	6.7	56
35	Urban waste composts enhance OC and N stocks after long-term amendment but do not alter organic matter composition. *Agriculture, Ecosystems and Environment*, **2016**, 223, 211-222	5.7	22
34	Novel Sample Preparation Technique To Improve Spectromicroscopic Analyses of Micrometer-Sized Particles. *Environmental Science & Technology*, **2015**, 49, 9874-80	10.3	8
33	Methods for visualising active microbial benzene degraders in in situ microcosms. *Applied Microbiology and Biotechnology*, **2015**, 99, 957-68	5.7	11
32	Archaeal and bacterial communities across a chronosequence of drained lake basins in Arctic Alaska. *Scientific Reports*, **2015**, 5, 18165	4.9	13
31	Properties and bioavailability of particulate and mineral-associated organic matter in Arctic permafrost soils, Lower Kolyma Region, Russia. *European Journal of Soil Science*, **2015**, 66, 722-734	3.4	42
30	Large amounts of labile organic carbon in permafrost soils of northern Alaska. *Global Change Biology*, **2015**, 21, 2804-2817	11.4	64
29	Long-term stabilization of deep soil carbon by fire and burial during early Holocene climate change. *Nature Geoscience*, **2014**, 7, 428-432	18.3	53
28	Decoupled carbon and nitrogen mineralization in soil particle size fractions of a forest topsoil. *Soil Biology and Biochemistry*, **2014**, 78, 263-273	7.5	47

27	Bioavailability and isotopic composition of CO2 released from incubated soil organic matter fractions. *Soil Biology and Biochemistry*, **2014**, 69, 168-178	7.5	35
26	Submicron structures provide preferential spots for carbon and nitrogen sequestration in soils. *Nature Communications*, **2014**, 5, 2947	17.4	220
25	Quantification of Hortonian overland flow generation and soil erosion in a Central European low mountain range using rainfall experiments. *Catena*, **2014**, 113, 202-212	5.8	17
24	Advances in the Analysis of Biogeochemical Interfaces. *Advances in Agronomy*, **2013**, 1-46	7.7	57
23	A de novo-designed antimicrobial peptide with activity against multiresistant Staphylococcus aureus acting on RsbW kinase. *FASEB Journal*, **2013**, 27, 4476-88	0.9	16
22	What controls the concentration of various aliphatic lipids in soil?. *Soil Biology and Biochemistry*, **2013**, 63, 14-17	7.5	19
21	Organic matter composition and stabilization in a polygonal tundra soil of the Lena Delta. *Biogeosciences*, **2013**, 10, 3145-3158	4.6	60
20	STXM and NanoSIMS investigations on EPS fractions before and after adsorption to goethite. *Environmental Science & Technology*, **2013**, 47, 3158-66	10.3	74
19	Collecting in situ precipitated iron oxides in their natural soil environment. *Journal of Plant Nutrition and Soil Science*, **2013**, 176, 497-499	2.3	1
18	NanoSIMS as a tool for characterizing soil model compounds and organomineral associations in artificial soils. *Journal of Soils and Sediments*, **2012**, 12, 35-47	3.4	45
17	Submicron scale imaging of soil organic matter dynamics using NanoSIMS □From single particles to intact aggregates. *Organic Geochemistry*, **2012**, 42, 1476-1488	3.1	72
16	Aggregate stability and physical protection of soil organic carbon in semi-arid steppe soils. *European Journal of Soil Science*, **2012**, 63, 22-31	3.4	85
15	Soil Aggregate Destruction by Ultrasonication Increases Soil Organic Matter Mineralization and Mobility. *Soil Science Society of America Journal*, **2012**, 76, 1634-1643	2.5	29
14	Growth and physiology of olive pioneer and fibrous roots exposed to soil moisture deficits. *Tree Physiology*, **2011**, 31, 1228-37	4.2	31
13	Enhanced ozone exposure of European beech (Fagus sylvatica) stimulates nitrogen mobilization from leaf litter and nitrogen accumulation in the soil. *Plant Biosystems*, **2010**, 144, 537-546	1.6	8
12	Initial differentiation of vertical soil organic matter distribution and composition under juvenile beech (Fagus sylvatica L.) trees. *Plant and Soil*, **2009**, 323, 111-123	4.2	28
11	Analysing the role of soil properties, initial biomass and ozone on observed plant growth variability in a lysimeter study. *Plant and Soil*, **2009**, 323, 125-141	4.2	13
10	Soil organic carbon stocks, distribution, and composition affected by historic land use changes on adjacent sites. *Biology and Fertility of Soils*, **2009**, 45, 347-359	6.1	70

9	Effects of land-use change on chemical composition of soil organic matter in tropical lowland Bolivia. *Grassland Science*, **2009**, 55, 104-109	1.3	8
8	Linking rhizosphere processes across scales: Opinion. *Plant and Soil*,1	4.2	2
7	Ensuring planetary survival: the centrality of organic carbon in balancing the multifunctional nature of soils. *Critical Reviews in Environmental Science and Technology*,1-17	11.1	7
6	From fibrous plant residues to mineral-associated organic carbon □the fate of organic matter in Arctic permafrost soils		2
5	Which are important soil parameters influencing the spatial heterogeneity of ¹⁴C in soil organic matter?		2
4	Supplementary material to "Which are important soil parameters influencing the spatial heterogeneity of ¹⁴C in soil organic matter?"		2
3	Organic matter composition and stabilization in a polygonal tundra soil of the Lena-Delta		6
2	Contribution of Particulate and Mineral-Associated Organic Matter to Potential Denitrification of Agricultural Soils. *Frontiers in Environmental Science*,9,	4.8	1
1	Probing the nature of soil organic matter. *Critical Reviews in Environmental Science and Technology*,1-22	11.1	4