Bettina Weber

List of Publications by Year in descending order

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85 papers	6,423 citations	87843 38 h-index	71651 76 g-index
118 all docs	118 docs citations	118 times ranked	6233 citing authors

#	Article	IF	Citations
1	Contribution of cryptogamic covers to the global cycles of carbon and nitrogen. Nature Geoscience, 2012, 5, 459-462.	5.4	711
2	Bioaerosols in the Earth system: Climate, health, and ecosystem interactions. Atmospheric Research, 2016, 182, 346-376.	1.8	609
3	Aerosol Health Effects from Molecular to Global Scales. Environmental Science & Technology, 2017, 51, 13545-13567.	4.6	384
4	Dryland photoautotrophic soil surface communities endangered by global change. Nature Geoscience, 2018, 11, 185-189.	5.4	302
5	Southern African Biological Soil Crusts are Ubiquitous and Highly Diverse in Drylands, Being Restricted by Rainfall Frequency. Microbial Ecology, 2009, 57, 229-247.	1.4	271
6	The Amazon Tall Tower Observatory (ATTO): overview of pilot measurements on ecosystem ecology, meteorology, trace gases, and aerosols. Atmospheric Chemistry and Physics, 2015, 15, 10723-10776.	1.9	218
7	Photoautotrophic organisms control microbial abundance, diversity, and physiology in different types of biological soil crusts. ISME Journal, 2018, 12, 1032-1046.	4.4	197
8	Air Pollution and Climate Change Effects on Allergies in the Anthropocene: Abundance, Interaction, and Modification of Allergens and Adjuvants. Environmental Science & Technology, 2017, 51, 4119-4141.	4.6	193
9	Biological Soil Crusts as an Organizing Principle in Drylands. Ecological Studies, 2016, , 3-13.	0.4	191
10	Biological Soil Crusts: An Organizing Principle in Drylands. Ecological Studies, 2016, , .	0.4	183
11	Reshaping of sandstone surfaces by cryptoendolithic cyanobacteria: bioalkalization causes chemical weathering in arid landscapes. Geobiology, 2004, 2, 261-268.	1.1	160
12	Biological soil crusts accelerate the nitrogen cycle through large NO and HONO emissions in drylands. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 15384-15389.	3.3	153
13	The pervasive and multifaceted influence of biocrusts on water in the world's drylands. Global Change Biology, 2020, 26, 6003-6014.	4.2	129
14	Patterns and Controls on Nitrogen Cycling of Biological Soil Crusts. Ecological Studies, 2016, , 257-285.	0.4	113
15	Estimating global carbon uptake by lichens and bryophytes with a process-based model. Biogeosciences, 2013, 10, 6989-7033.	1.3	102
16	Estimating impacts of lichens and bryophytes on global biogeochemical cycles. Global Biogeochemical Cycles, 2014, 28, 71-85.	1.9	102
17	Nitrous oxide and methane emissions from cryptogamic covers. Global Change Biology, 2015, 21, 3889-3900.	4.2	94
18	Improved appreciation of the functioning and importance of biological soil crusts in Europe: the Soil Crust International Project (SCIN). Biodiversity and Conservation, 2014, 23, 1639-1658.	1.2	93

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19	Spatial and temporal variability of canopy structure in a tropical moist forest. Acta Oecologica, 2001, 22, 235-244.	0.5	88
20	Response of biological soil crusts to raindrop erosivity and underlying influences in the hilly Loess Plateau region, China. Biodiversity and Conservation, 2014, 23, 1669-1686.	1.2	88
21	What is a biocrust? A refined, contemporary definition for a broadening research community. Biological Reviews, 2022, 97, 1768-1785.	4.7	87
22	A new approach for mapping of Biological Soil Crusts in semidesert areas with hyperspectral imagery. Remote Sensing of Environment, 2008, 112, 2187-2201.	4.6	81
23	Natural Recovery of Biological Soil Crusts After Disturbance. Ecological Studies, 2016, , 479-498.	0.4	78
24	Rapid succession of Biological Soil Crusts after experimental disturbance in the Succulent Karoo, South Africa. Applied Soil Ecology, 2011, 48, 263-269.	2.1	72
25	High potential for weathering and climate effects of non-vascular vegetation in the Late Ordovician. Nature Communications, 2016, 7, 12113.	5.8	72
26	Daytime formation of nitrous acid at a coastal remote site in Cyprus indicating a common ground source of atmospheric HONO and NO. Atmospheric Chemistry and Physics, 2016, 16, 14475-14493.	1.9	69
27	Ecosystem services provided by biocrusts: From ecosystem functions to social values. Journal of Arid Environments, 2018, 159, 45-53.	1.2	67
28	Carbon Budgets of Biological Soil Crusts at Micro-, Meso-, and Global Scales. Ecological Studies, 2016, , 287-304.	0.4	63
29	Genotypic and Phenotypic Diversity of Cyanobacteria in Biological Soil Crusts of the Succulent Karoo and Nama Karoo of Southern Africa. Microbial Ecology, 2014, 67, 286-301.	1.4	60
30	The concurrent use of novel soil surface microclimate measurements to evaluate CO2 pulses in biocrusted interspaces in a cool desert ecosystem. Biogeochemistry, 2017, 135, 239-249.	1.7	58
31	Soil HONO emissions at high moisture content are driven by microbial nitrate reduction to nitrite: tackling the HONO puzzle. ISME Journal, 2019, 13, 1688-1699.	4.4	57
32	Emission of nitrous acid from soil and biological soil crusts represents an important source of HONO in the remote atmosphere in Cyprus. Atmospheric Chemistry and Physics, 2018, 18, 799-813.	1.9	52
33	Long-term study on coarse mode aerosols in the Amazon rain forest with the frequent intrusion of Saharan dust plumes. Atmospheric Chemistry and Physics, 2018, 18, 10055-10088.	1.9	52
34	Screening of herbal extracts for TLR2- and TLR4-dependent anti-inflammatory effects. PLoS ONE, 2018, 13, e0203907.	1.1	48
35	Bryophyte-dominated biological soil crusts mitigate soil erosion in an early successional Chinese subtropical forest. Biogeosciences, 2017, 14, 5775-5788.	1.3	47
36	Importance of biocrusts in dryland monitoring using spectral indices. Remote Sensing of Environment, 2015, 170, 32-39.	4.6	46

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37	Continuous chlorophyll fluorescence, gas exchange and microclimate monitoring in a natural soil crust habitat in Tabernas badlands, AlmerÃa, Spain: progressing towards a model to understand productivity. Biodiversity and Conservation, 2014, 23, 1809-1826.	1.2	42
38	Microbiome change by symbiotic invasion in lichens. Environmental Microbiology, 2016, 18, 1428-1439.	1.8	41
39	Land cover and its transformation in the backward trajectory footprint region of the Amazon Tall Tower Observatory. Atmospheric Chemistry and Physics, 2019, 19, 8425-8470.	1.9	41
40	Revisiting chlorophyll extraction methods in biological soil crusts â€“ methodology for determination of chlorophyll <i>a</i> and chlorophyllÂ<i>a</i>â€‰+â€‰<i>b</i> as compared to previous methods. Biogeosciences, 2018, 15, 1415-1424.	1.3	37
41	The advantage of growing on moss: facilitative effects on photosynthetic performance and growth in the cyanobacterial lichen Peltigera rufescens. Oecologia, 2012, 169, 599-607.	0.9	36
42	Global cycling and climate effects of aeolian dust controlled by biological soil crusts. Nature Geoscience, 2022, 15, 458-463.	5.4	36
43	Transferability of multi- and hyperspectral optical biocrust indices. ISPRS Journal of Photogrammetry and Remote Sensing, 2017, 126, 94-107.	4.9	34
44	Habitat-dependent composition of bacterial and fungal communities in biological soil crusts from Oman. Scientific Reports, 2019, 9, 6468.	1.6	34
45	Characterization and differentiation of rock varnish types from different environments by microanalytical techniques. Chemical Geology, 2017, 459, 91-118.	1.4	31
46	Ecophysiological analysis of moss-dominated biological soil crusts and their separate components from the Succulent Karoo, South Africa. Planta, 2012, 236, 129-139.	1.6	30
47	Development and calibration of a novel sensor to quantify the water content of surface soils and biological soil crusts. Methods in Ecology and Evolution, 2016, 7, 14-22.	2.2	28
48	Metabolic activity duration can be effectively predicted from macroclimatic data for biological soil crust habitats across Europe. Geoderma, 2017, 306, 10-17.	2.3	27
49	Insights into microbial involvement in desert varnish formation retrieved from metagenomic analysis. Environmental Microbiology Reports, 2018, 10, 264-271.	1.0	27
50	Tropical and Boreal Forest â€“ Atmosphere Interactions: A Review. Tellus, Series B: Chemical and Physical Meteorology, 2022, 74, 24.	0.8	27
51	Effects of heuweltjies and utilization on vegetation patterns in the Succulent Karoo, South Africa. Journal of Arid Environments, 2012, 87, 198-205.	1.2	24
52	Estimating global nitrous oxide emissions by lichens and bryophytes with a process-based productivity model. Biogeosciences, 2017, 14, 1593-1602.	1.3	23
53	Microanalytical methods for in-situ high-resolution analysis of rock varnish at the micrometer to nanometer scale. Chemical Geology, 2015, 411, 57-68.	1.4	22
54	Biomass assessment of microbial surface communities by means of hyperspectral remote sensing data. Science of the Total Environment, 2017, 586, 1287-1297.	3.9	22

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55	Water-driven microbial nitrogen transformations in biological soil crusts causing atmospheric nitrous acid and nitric oxide emissions. ISME Journal, 2022, 16, 1012-1024.	4.4	22
56	Respiration-induced weathering patterns of two endolithically growing lichens. Geobiology, 2011, 9, 34-43.	1.1	21
57	Ecological characterization of soil-inhabiting and hypolithic soil crusts within the Knersvlakte, South Africa. Ecological Processes, 2013, 2, .	1.6	21
58	Black manganese-rich crusts on a Gothic cathedral. Atmospheric Environment, 2017, 171, 205-220.	1.9	21
59	Ecophysiological properties of three biological soil crust types and their photoautotrophs from the Succulent Karoo, South Africa. Plant and Soil, 2018, 429, 127-146.	1.8	20
60	Biological soil crusts of the Succulent Karoo: a review. African Journal of Range and Forage Science, 2018, 35, 335-350.	0.6	20
61	Microstructure and Weathering Processes Within Biological Soil Crusts. Ecological Studies, 2016, , 237-255.	0.4	19
62	Fresh water, marine and terrestrial cyanobacteria display distinct allergen characteristics. Science of the Total Environment, 2018, 612, 767-774.	3.9	19
63	Synthesis on Biological Soil Crust Research. Ecological Studies, 2016, , 527-534.	0.4	17
64	Assessing recovery of biological soil crusts across a latitudinal gradient in Western Europe. Restoration Ecology, 2018, 26, 543-554.	1.4	17
65	Biological soil crusts as an integral component of desert environments. Ecological Processes, 2013, 2, .	1.6	16
66	Fast Reactivation by High Air Humidity and Photosynthetic Performance of Alpine Lichens Growing Endolithically in Limestone. Arctic, Antarctic, and Alpine Research, 2007, 39, 309-317.	0.4	14
67	Remote Sensing of Biological Soil Crusts at Different Scales. Ecological Studies, 2016, , 215-234.	0.4	14
68	Global NO and HONO emissions of biological soil crusts estimated by a process-based non-vascular vegetation model. Biogeosciences, 2019, 16, 2003-2031.	1.3	14
69	Aerosol measurement methods to quantify spore emissions from fungi and cryptogamic covers in the Amazon. Atmospheric Measurement Techniques, 2020, 13, 153-164.	1.2	14
70	Effects of climate change and land use intensification on regional biological soil crust cover and composition in southern Africa. Geoderma, 2022, 406, 115508.	2.3	14
71	Influence of seasonality on the aerosol microbiome of the Amazon rainforest. Science of the Total Environment, 2021, 760, 144092.	3.9	13
72	Geochemical insights into the relationship of rock varnish and adjacent mineral dust fractions. Chemical Geology, 2020, 551, 119775.	1.4	12

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73	Bioaerosols in the Amazon rain forest: temporal variations and vertical profiles of Eukarya, Bacteria, and Archaea. Biogeosciences, 2021, 18, 4873-4887.	1.3	12
74	Biology and ecology of cryptoendolithic cyanobacteria of a sandstone outcrop in the Northern Province, South Africa. Algological Studies, 1996, 83, 565-579.	0.1	12
75	Mapping and analysis of distribution patterns of lichens on rural medieval churches in north-eastern Germany. Lichenologist, 2001, 33, 231-248.	0.5	10
76	Microclimatic conditions and water content fluctuations experienced by epiphytic bryophytes in an Amazonian rain forest. Biogeosciences, 2020, 17, 5399-5416.	1.3	10
77	Bioaerosols and atmospheric ice nuclei in a Mediterranean dryland: community changes related to rainfall. Biogeosciences, 2022, 19, 71-91.	1.3	8
78	Key Role of Equilibrium HONO Concentration over Soil in Quantifying Soilâ€“Atmosphere HONO Fluxes. Environmental Science & Technology, 2022, 56, 2204-2212.	4.6	8
79	Estimated abundance and diversity of heterotrophic protists in South African biocrusts. South African Journal of Science, 2016, 112, 5.	0.3	5
80	Empirical formulation for multiple groups of primary biological ice nucleating particles from field observations over Amazonia. Journals of the Atmospheric Sciences, 2021, , .	0.6	5
81	Cryptogamic organisms are a substantial source and sink for volatile organic compounds in the Amazon region. Communications Earth & Environment, 2021, 2, .	2.6	5
82	Broader Impacts for Ecologists: Biological Soil Crust as a Model System for Education. Frontiers in Microbiology, 2020, 11, 577922.	1.5	4
83	Artifacts from manganese reduction in rock samples prepared by focused ion beam (FIB) slicing for X-ray microspectroscopy. Geoscientific Instrumentation, Methods and Data Systems, 2019, 8, 97-111.	0.6	2
84	Manufacturing Simple and Inexpensive Soil Surface Temperature and Gravimetric Water Content Sensors. Journal of Visualized Experiments, 2019, , .	0.2	2
85	X-ray Microspectroscopy and Ptychography on Nanoscale Structures in Rock Varnish. Journal of Physical Chemistry C, 2021, 125, 22684-22697.	1.5	1