Gregor Rehder

List of Publications by Year
in descending order

89 papers	8,635 citations	87886 38 h-index	48312 88 g-index
116 all docs	116 docs citations	116 times ranked	12291 citing authors

#	Article	IF	Citations
1	Global Carbon Budget 2018. Earth System Science Data, 2018, 10, 2141-2194.	9.9	1,167
2	Global Carbon Budget 2019. Earth System Science Data, 2019, 11, 1783-1838.	9.9	1,159
3	Global Carbon Budget 2017. Earth System Science Data, 2018, 10, 405-448.	9.9	801
4	Global Carbon Budget 2021. Earth System Science Data, 2022, 14, 1917-2005.	9.9	663
5	Global Carbon Budget 2015. Earth System Science Data, 2015, 7, 349-396.	9.9	616
6	Gas hydrate destabilization: enhanced dewatering, benthic material turnover and large methane plumes at the Cascadia convergent margin. Earth and Planetary Science Letters, 1999, 170, 1-15.	4.4	386
7	Jiulong methane reef: Microbial mediation of seep carbonates in the South China Sea. Marine Geology, 2008, 249, 243-256.	2.1	196
8	Investigating hypoxia in aquatic environments: diverse approaches to addressing a complex phenomenon. Biogeosciences, 2014, 11, 1215-1259.	3.3	175
9	Enhanced lifetime of methane bubble streams within the deep ocean. Geophysical Research Letters, 2002, 29, 21-1-21-4.	4.0	170
10	Methane Hydrate Pellet Transport Using the Self-Preservation Effect: A Techno-Economic Analysis. Energies, 2012, 5, 2499-2523.	3.1	133
11	Distribution and height of methane bubble plumes on the Cascadia Margin characterized by acoustic imaging. Geophysical Research Letters, 2003, 30, .	4.0	127
12	Dissolution rates of pure methane hydrate and carbon-dioxide hydrate in undersaturated seawater at 1000-m depth. Geochimica Et Cosmochimica Acta, 2004, 68, 285-292.	3.9	123
13	Controls on methane bubble dissolution inside and outside the hydrate stability field from open ocean field experiments and numerical modeling. Marine Chemistry, 2009, 114, 19-30.	2.3	110
14	Effects of climate change on methane emissions from seafloor sediments in the Arctic Ocean: A review. Limnology and Oceanography, 2016, 61, S283.	3.1	109
15	Quantification of seep-related methane gas emissions at Tommeliten, North Sea. Continental Shelf Research, 2011, 31, 867-878.	1.8	107
16	Methane in the northern Atlantic controlled by microbial oxidation and atmospheric history. Geophysical Research Letters, 1999, 26, 587-590.	4.0	104
17	Estimates of methane output from mud extrusions at the erosive convergent margin off Costa Rica. Marine Geology, 2006, 225, 129-144.	2.1	94
18	â€œSelf-Preservationâ€•of CH₄ Hydrates for Gas Transport Technology: Pressureâ€“Temperature Dependence and Ice Microstructures. Energy & Fuels, 2014, 28, 6275-6283.	5.1	91

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19	Methane emission from high-intensity marine gas seeps in the Black Sea into the atmosphere. Geophysical Research Letters, 2005, 32, n/a-n/a.	4.0	90
20	Long-term alkalinity trends in the Baltic Sea and their implications for CO₂ -induced acidification. Limnology and Oceanography, 2016, 61, 1984-2002.	3.1	87
21	The Multiple Sources and Patterns of Methane inNorth Sea Waters. Aquatic Geochemistry, 1998, 4, 403-427.	1.3	79
22	In situ benthic fluxes from an intermittently active mud volcano at the Costa Rica convergent margin. Earth and Planetary Science Letters, 2005, 235, 79-95.	4.4	78
23	An experiment demonstrating that marine slumping is a mechanism to transfer methane from seafloor gas-hydrate deposits into the upper ocean and atmosphere. Geo-Marine Letters, 2002, 22, 198-203.	1.1	76
24	Methane sources, distributions, and fluxes from cold vent sites at Hydrate Ridge, Cascadia Margin. Global Biogeochemical Cycles, 2005, 19, n/a-n/a.	4.9	75
25	Experimental Determination of the Fate of Rising CO2Droplets in Seawater. Environmental Science & Technology, 2002, 36, 5441-5446.	10.0	74
26	Methane-Carbon Flow into the Benthic Food Web at Cold Seeps â€“ A Case Study from the Costa Rica Subduction Zone. PLoS ONE, 2013, 8, e74894.	2.5	70
27	Pockmarks off Big Sur, California. Marine Geology, 2002, 181, 323-335.	2.1	61
28	A new method for continuous measurement of methane and carbon dioxide in surface waters using offâ€axis integrated cavity output spectroscopy (ICOS): An example from the Baltic Sea. Limnology and Oceanography: Methods, 2011, 9, 176-184.	2.0	61
29	Methane and pCO2 in the Kuroshio and the South China Sea during maximum summer surface temperatures. Marine Chemistry, 2001, 75, 89-108.	2.3	58
30	Distribution of methane in the water column of the Baltic Sea. Geophysical Research Letters, 2010, 37, .	4.0	54
31	The contribution of zooplankton to methane supersaturation in the oxygenated upper waters of the central Baltic Sea. Limnology and Oceanography, 2018, 63, 412-430.	3.1	52
32	Metabolically active microbial communities in marine sediment under high-CO2 and low-pH extremes. ISME Journal, 2013, 7, 555-567.	9.8	51
33	Indications of a link between seismotectonics and CH4release from seeps off Costa Rica. Geochemistry, Geophysics, Geosystems, 2007, 8, n/a-n/a.	2.5	50
34	Enhanced marine CH4emissions to the atmosphere off Oregon caused by coastal upwelling. Global Biogeochemical Cycles, 2002, 16, 2-1-2-11.	4.9	49
35	One year of continuous measurements constraining methane emissions from the Baltic Sea to the atmosphere using a ship of opportunity. Biogeosciences, 2013, 10, 81-99.	3.3	48
36	An intercomparison of oceanic methane and nitrous oxide measurements. Biogeosciences, 2018, 15, 5891-5907.	3.3	42

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37	Ongoing methane discharge at well site 22/4b (North Sea) and discovery of a spiral vortex bubble plume motion. Marine and Petroleum Geology, 2015, 68, 718-730.	3.3	41
38	Noble gases and radiocarbon in natural gas hydrates. Geophysical Research Letters, 2002, 29, 63-1-63-4.	4.0	40
39	Measurements of the fate of gas hydrates during transit through the ocean water column. Geophysical Research Letters, 2002, 29, 38-1-38-4.	4.0	39
40	Predominance of methanogens over methanotrophs in rewetted fens characterized by high methane emissions. Biogeosciences, 2018, 15, 6519-6536.	3.3	38
41	A low frequency multibeam assessment: Spatial mapping of shallow gas by enhanced penetration and angular response anomaly. Marine and Petroleum Geology, 2013, 44, 217-222.	3.3	35
42	Seasonal and spatial methane dynamics in the water column of the central Baltic Sea (Gotland Sea). Continental Shelf Research, 2014, 91, 12-25.	1.8	32
43	A Harmonized Nitrous Oxide (N2O) Ocean Observation Network for the 21st Century. Frontiers in Marine Science, 2019, 6, .	2.5	32
44	Gas seepage in the Dnepr paleo-delta area (NW-Black Sea) and its regional impact on the water column methane cycle. Journal of Marine Systems, 2010, 80, 90-100.	2.1	31
45	Detecting sinks and sources of CO2 and CH4 by ferrybox-based measurements in the Baltic Sea: Three case studies. Journal of Marine Systems, 2014, 140, 13-25.	2.1	31
46	Understanding the Coastal Ecocline: Assessing Seaâ€“Land Interactions at Non-tidal, Low-Lying Coasts Through Interdisciplinary Research. Frontiers in Marine Science, 2018, 5, .	2.5	30
47	Controls on zooplankton methane production in the central Baltic Sea. Biogeosciences, 2019, 16, 1-16.	3.3	30
48	Aerobic methanotrophy within the pelagic redox-zone of the Gotland Deep (central Baltic Sea). Biogeosciences, 2012, 9, 4969-4977.	3.3	29
49	The fate of bubbles in a large, intense bubble megaplume for stratified and unstratified water: Numerical simulations of 22/4b expedition field data. Marine and Petroleum Geology, 2015, 68, 806-823.	3.3	27
50	A Surface Ocean CO2 Reference Network, SOCONET and Associated Marine Boundary Layer CO2 Measurements. Frontiers in Marine Science, 2019, 6, .	2.5	26
51	Methane dynamics in the Weddell Sea determined via stable isotope ratios and CFC-11. Global Biogeochemical Cycles, 2004, 18, n/a-n/a.	4.9	25
52	The Baltic Sea Tracer Release Experiment: 1. Mixing rates. Journal of Geophysical Research, 2012, 117, .	3.3	25
53	Airâ€“sea CO2 exchange in the Gulf of Bothnia, Baltic Sea. Continental Shelf Research, 2012, 37, 46-56.	1.8	24
54	Comment on â€œA Persistent Oxygen Anomaly Reveals the Fate of Spilled Methane in the Deep Gulf of Mexicoâ€. Science, 2011, 332, 1033-1033.	12.6	23

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55	Comparative studies of pelagic microbial methane oxidation within the redox zones of the Gotland Deep and Landsort Deep (central Baltic Sea). Biogeosciences, 2013, 10, 7863-7875.	3.3	22
56	Metrology of pH Measurements in Brackish Watersâ€"Part 2: Experimental Characterization of Purified meta-Cresol Purple for Spectrophotometric pHT Measurements. Frontiers in Marine Science, 2018, 5, .	2.5	22
57	Biogeochemical functioning of the Baltic Sea. Earth System Dynamics, 2022, 13, 633-685.	7.1	22
58	Methane hydrate dissolution rates in undersaturated seawater under controlled hydrodynamic forcing. Marine Chemistry, 2009, 115, 226-234.	2.3	21
59	A review of oceanographic and meteorological controls on the North Sea circulation and hydrodynamics with a view to the fate of North Sea methane from well site 22/4b and other seabed sources. Marine and Petroleum Geology, 2015, 68, 861-882.	3.3	21
60	The Î´13C anomaly in the northeastern Atlantic. Global Biogeochemical Cycles, 1998, 12, 467-477.	4.9	20
61	Experimental Investigation of the Rising Behavior of CO₂Droplets in Seawater under Hydrate-Forming Conditions. Environmental Science & Technology, 2008, 42, 5241-5246.	10.0	20
62	N₂O Emissions From the Northern Benguela Upwelling System. Geophysical Research Letters, 2019, 46, 3317-3326.	4.0	19
63	Metrology for pH Measurements in Brackish Watersâ€"Part 1: Extending Electrochemical pHT Measurements of TRIS Buffers to Salinities 5â€"20. Frontiers in Marine Science, 2018, 5, .	2.5	18
64	Seepage of methane at Jaco Scar, a slide caused by seamount subduction offshore Costa Rica. International Journal of Earth Sciences, 2014, 103, 1801-1815.	1.8	16
65	Spectrophotometric pH measurements in the presence of dissolved organic matter and hydrogen sulfide. Limnology and Oceanography: Methods, 2018, 16, 68-82.	2.0	16
66	Ideas and perspectives: A strategic assessment of methane and nitrous oxide measurements in the marine environment. Biogeosciences, 2020, 17, 5809-5828.	3.3	16
67	Sub-marine Continuation of Peat Deposits From a Coastal Peatland in the Southern Baltic Sea and its Holocene Development. Frontiers in Earth Science, 2018, 6, .	1.8	15
68	Congruent changes in microbial community dynamics and ecosystem methane fluxes following natural drought in two restored fens. Soil Biology and Biochemistry, 2021, 160, 108348.	8.8	15
69	Seasonal variation of methane in the water column of Arkona and Bornholm Basin, western Baltic Sea. Journal of Marine Systems, 2014, 139, 332-347.	2.1	14
70	Effects of the 2014 major Baltic inflow on methane and nitrous oxide dynamics in the water column of the central Baltic Sea. Earth System Dynamics, 2017, 8, 817-826.	7.1	14
71	Ecological ReGional Ocean Model with vertically resolved sediments (ERGOMÂSEDÂ1.0): coupling benthic and pelagic biogeochemistry of the south-western Baltic Sea. Geoscientific Model Development, 2019, 12, 275-320.	3.6	14
72	The northern European shelf as an increasing net sink for CO₂. Biogeosciences, 2021, 18, 1127-1147.	3.3	14

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73	Constraining the Oceanic Uptake and Fluxes of Greenhouse Gases by Building an Ocean Network of Certified Stations: The Ocean Component of the Integrated Carbon Observation System, ICOS-Oceans. Frontiers in Marine Science, 2019, 6, .	2.5	13
74	The characteristics of the CO2 system of the Oder River estuary (Baltic Sea). Journal of Marine Systems, 2020, 211, 103418.	2.1	13
75	Technical note: Seamless gas measurements across the landâ€“ocean aquatic continuum â€“ corrections and evaluation of sensor data for CO₂, CH₄ and O₂ from field deployments in contrasting environments. Biogeosciences, 2021, 18, 1351-1373.	3.3	13
76	Partial pressure and airâ€“sea flux of CO2 in the Northeast Atlantic during September 1995. Deep-Sea Research Part II: Topical Studies in Oceanography, 2001, 48, 3179-3189.	1.4	11
77	The FluxEngine airâ€“sea gas flux toolbox: simplified interface and extensions for in situ analyses and multiple sparingly soluble gases. Ocean Science, 2019, 15, 1707-1728.	3.4	10
78	Decoupling salinity and carbonate chemistry: low calcium ion concentration rather than salinity limits calcification in Baltic Sea mussels. Biogeosciences, 2021, 18, 2573-2590.	3.3	10
79	Fluid and gas fluxes from the Logatchev hydrothermal vent area. Geochemistry, Geophysics, Geosystems, 2012, 13, .	2.5	9
80	Biogeochemical cycles. , 2017, , 87-122.		9
81	The diurnal cycle of <i>p</i>CO₂ in the coastal region of the Baltic Sea. Ocean Science, 2021, 17, 1657-1675.	3.4	8
82	Carbon release and transformation from coastal peat deposits controlled by submarine groundwater discharge: a column experiment study. Limnology and Oceanography, 2020, 65, 1116-1135.	3.1	5
83	A Bioreactor Approach to Investigate the Linkage between Methane Oxidation and Nitrate/Nitrite Reduction in the Pelagic Oxic-Anoxic Transition Zone of the Central Baltic Sea. Frontiers in Marine Science, 2016, 3, .	2.5	3
84	Upwelling-induced trace gas dynamics in the Baltic Sea inferred from 8Âyears of autonomous measurements on a ship of opportunity. Biogeosciences, 2021, 18, 2679-2709.	3.3	3
85	Pelagic Methane Sink Enhanced by Benthic Methanotrophs Ejected From a Gas Seep. Geophysical Research Letters, 2021, 48, e2021GL094819.	4.0	3
86	Visual and Hydroacoustic Investigations of Gas Bubbles Detection and Quantification of Natural and Man-Made Methane Expulsions. Energy Exploration and Exploitation, 2003, 21, 293-297.	2.3	1
87	Hunting a New Ocean Tracer. Eos, 2008, 89, 419-419.	0.1	1
88	Meridional and Crossâ€Shelf Variability of N 2 O and CH 4 in the Easternâ€South Atlantic. Journal of Geophysical Research: Oceans, 2021, 126, e2020JC016878.	2.6	1
89	Cyanobacteria net community production in the Baltic Sea as inferred from profiling <i>p</i>CO₂ measurements. Biogeosciences, 2021, 18, 4889-4917.	3.3	0