Jens Hartmann

List of Publications by Year
in descending order

120 papers	11,964 citations	41344 49 h-index	27406 106 g-index
147 all docs	147 docs citations	147 times ranked	12904 citing authors

#	Article	IF	Citations
1	Global carbon dioxide emissions from inland waters. Nature, 2013, 503, 355-359.	27.8	1,670
2	Anthropogenic perturbation of the carbon fluxes from land to ocean. Nature Geoscience, 2013, 6, 597-607.	12.9	937
3	Negative emissionsâ€"Part 2: Costs, potentials and side effects. Environmental Research Letters, 2018, 13, 063002.	5.2	823
4	The new global lithological map database GLiM: A representation of rock properties at the Earth surface. Geochemistry, Geophysics, Geosystems, 2012, 13, .	2.5	575
5	Negative emissionsâ€"Part 1: Research landscape and synthesis. Environmental Research Letters, 2018, 13, 063001.	5.2	498
6	Enhanced chemical weathering as a geoengineering strategy to reduce atmospheric carbon dioxide, supply nutrients, and mitigate ocean acidification. Reviews of Geophysics, 2013, 51, 113-149.	23.0	323
7	Global distribution of carbonate rocks and karst water resources. Hydrogeology Journal, 2020, 28, 1661-1677.	2.1	315
8	Global patterns and dynamics of climateâ€"groundwater interactions. Nature Climate Change, 2019, 9, 137-141.	18.8	244
9	Global CO2-consumption by chemical weathering: What is the contribution of highly active weathering regions?. Global and Planetary Change, 2009, 69, 185-194.	3.5	241
10	Mapping permeability over the surface of the Earth. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	236
11	The World Karst Aquifer Mapping project: concept, mapping procedure and map of Europe. Hydrogeology Journal, 2017, 25, 771-785.	2.1	235
12	Negative emissionsâ€"Part 3: Innovation and upscaling. Environmental Research Letters, 2018, 13, 063003.	5.2	224
13	Spatial patterns in CO₂ evasion from the global river network. Global Biogeochemical Cycles, 2015, 29, 534-554.	4.9	223
14	Global chemical weathering and associated P-release â€" The role of lithology, temperature and soil properties. Chemical Geology, 2014, 363, 145-163.	3.3	215
15	Geoengineering potential of artificially enhanced silicate weathering of olivine. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 20228-20233.	7.1	202
16	A glimpse beneath earth's surface: GLobal HYdrogeology MaPS (GLHYMPS) of permeability and porosity. Geophysical Research Letters, 2014, 41, 3891-3898.	4.0	199
17	A review of CO₂ and associated carbon dynamics in headwater streams: A global perspective. Reviews of Geophysics, 2017, 55, 560-585.	23.0	198
18	Global spatial distribution of natural riverine silica inputs to the coastal zone. Biogeosciences, 2011, 8, 597-620.	3.3	174

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19	A full greenhouse gases budget of Africa: synthesis, uncertainties, and vulnerabilities. Biogeosciences, 2014, 11, 381-407.	3.3	162
20	Global multi-scale segmentation of continental and coastal waters from the watersheds to the continental margins. Hydrology and Earth System Sciences, 2013, 17, 2029-2051.	4.9	157
21	Potential and costs of carbon dioxide removal by enhanced weathering of rocks. Environmental Research Letters, 2018, 13, 034010.	5.2	152
22	Hydrogeological and Gasgeochemical Earthquake Precursors ? A Review for Application. Natural Hazards, 2005, 34, 279-304.	3.4	142
23	Olivine Dissolution in Seawater: Implications for CO₂ Sequestration through Enhanced Weathering in Coastal Environments. Environmental Science & Technology, 2017, 51, 3960-3972.	10.0	139
24	Glacial weathering, sulfide oxidation, and global carbon cycle feedbacks. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 8716-8721.	7.1	130
25	Temperature dependence of basalt weathering. Earth and Planetary Science Letters, 2016, 443, 59-69.	4.4	126
26	Carbon Dioxide Efficiency of Terrestrial Enhanced Weathering. Environmental Science & Technology, 2014, 48, 4809-4816.	10.0	119
27	Differential weathering of basaltic and granitic catchments from concentrationâ€“discharge relationships. Geochimica Et Cosmochimica Acta, 2016, 190, 265-293.	3.9	113
28	A Brief Overview of the GLObal RIver Chemistry Database, GLORICH. Procedia Earth and Planetary Science, 2014, 10, 23-27.	0.6	111
29	Global patterns of dissolved silica export to the coastal zone: Results from a spatially explicit global model. Global Biogeochemical Cycles, 2009, 23, .	4.9	103
30	The carbon budget of terrestrial ecosystems in East Asia over the last two decades. Biogeosciences, 2012, 9, 3571-3586.	3.3	103
31	Widespread diminishing anthropogenic effects on calcium in freshwaters. Scientific Reports, 2019, 9, 10450.	3.3	84
32	Compiling and Mapping Global Permeability of the Unconsolidated and Consolidated Earth: GLobal HYdrogeology MaPS 2.0 (GLHYMPS 2.0). Geophysical Research Letters, 2018, 45, 1897-1904.	4.0	82
33	Global climate control on carbonate weathering intensity. Chemical Geology, 2019, 527, 118762.	3.3	82
34	Submarine groundwater discharge from tropical islands: a review. Grundwasser, 2015, 20, 53-67.	1.4	81
35	Catchment chemostasis revisited: Water quality responds differently to variations in weather and climate. Hydrological Processes, 2019, 33, 3056-3069.	2.6	81
36	Multi-Criteria Decision Support Systems for Flood Hazard Mitigation and Emergency Response in Urban Watersheds. Journal of the American Water Resources Association, 2007, 43, 346-358.	2.4	80

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37	Bicarbonate-fluxes and CO2-consumption by chemical weathering on the Japanese Archipelago â€” Application of a multi-lithological model framework. Chemical Geology, 2009, 265, 237-271.	3.3	74
38	Abrupt shifts of the Saharaâ€“Sahel boundary during Heinrich stadials. Climate of the Past, 2013, 9, 1181-1191.	3.4	71
39	Substantial decrease in CO2 emissions from Chinese inland waters due to global change. Nature Communications, 2021, 12, 1730.	12.8	71
40	A geostatistical framework for predicting variations in strontium concentrations and isotope ratios in Alaskan rivers. Chemical Geology, 2014, 389, 1-15.	3.3	70
41	Empirical estimates of regional carbon budgets imply reduced global soil heterotrophic respiration. National Science Review, 2021, 8, nwaa145.	9.5	70
42	Potential CO2 removal from enhanced weathering by ecosystem responses to powdered rock. Nature Geoscience, 2021, 14, 545-549.	12.9	69
43	Enhanced Weathering and related element fluxes â€“ a cropland mesocosm approach. Biogeosciences, 2020, 17, 103-119.	3.3	68
44	Dissolved silica mobilization in the conterminous USA. Chemical Geology, 2010, 270, 90-109.	3.3	67
45	Atmospheric CO2 consumption by chemical weathering in North America. Geochimica Et Cosmochimica Acta, 2011, 75, 7829-7854.	3.9	59
46	Chemical weathering rates of silicate-dominated lithological classes and associated liberation rates of phosphorus on the Japanese Archipelagoâ€”Implications for global scale analysis. Chemical Geology, 2011, 287, 125-157.	3.3	58
47	Reviews and syntheses: An empirical spatiotemporal description of the global surfaceâ€“atmosphere carbon fluxes: opportunities and data limitations. Biogeosciences, 2017, 14, 3685-3703.	3.3	58
48	Assessing the nonconservative fluvial fluxes of dissolved organic carbon in North America. Journal of Geophysical Research, 2012, 117, .	3.3	57
49	Reviews and syntheses: Anthropogenic perturbations to carbon fluxes in Asian river systems â€“ concepts, emerging trends, and research challenges. Biogeosciences, 2018, 15, 3049-3069.	3.3	55
50	Modelling Estuarine Biogeochemical Dynamics: From the Local to the Global Scale. Aquatic Geochemistry, 2013, 19, 591-626.	1.3	54
51	The European land and inland water CO₂, CO, CH₄ and N₂O balance between 2001 and 2005. Biogeosciences, 2012, 9, 3357-3380.	3.3	53
52	Carbon dynamics in the freshwater part of the Elbe estuary, Germany: Implications of improving water quality. Estuarine, Coastal and Shelf Science, 2012, 107, 112-121.	2.1	51
53	Oceanic CO₂ outgassing and biological production hotspots induced by pre-industrial river loads of nutrients and carbon in a global modeling approach. Biogeosciences, 2020, 17, 55-88.	3.3	51
54	Predicting riverine dissolved silica fluxes to coastal zones from a hyperactive region and analysis of their first-order controls. International Journal of Earth Sciences, 2010, 99, 207-230.	1.8	50

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55	What controls the spatial patterns of the riverine carbonate system? â€" A case study for North America. Chemical Geology, 2013, 337-338, 114-127.	3.3	47
56	Biogeochemical Output and Typology of Rivers Draining Patagonia's Atlantic Seaboard. Journal of Coastal Research, 2005, 214, 835-844.	0.3	44
57	The geochemical composition of the terrestrial surface (without soils) and comparison with the upper continental crust. International Journal of Earth Sciences, 2012, 101, 365-376.	1.8	44
58	What is the maximum potential for CO2 sequestration by â€œstimulatedâ€•weathering on the global scale?. Die Naturwissenschaften, 2008, 95, 1159-1164.	1.6	43
59	Sulfate sulfur isotopes and major ion chemistry reveal that pyrite oxidation counteracts CO2 drawdown from silicate weathering in the Langtang-Trisuli-Narayani River system, Nepal Himalaya. Geochimica Et Cosmochimica Acta, 2021, 294, 43-69.	3.9	41
60	Depth of Solute Generation Is a Dominant Control on Concentrationâ€Discharge Relations. Water Resources Research, 2020, 56, e2019WR026695.	4.2	38
61	Ecosystem controlled soil-rock pCO2 and carbonate weathering â€" Constraints by temperature and soil water content. Chemical Geology, 2019, 527, 118634.	3.3	37
62	Climateâ€driven changes in chemical weathering and associated phosphorus release since 1850: Implications for the land carbon balance. Geophysical Research Letters, 2014, 41, 3553-3558.	4.0	35
63	Seasonal response of airâ€"water CO₂ exchange along the landâ€"ocean aquatic continuum of the northeast North American coast.. Biogeosciences, 2015, 12, 1447-1458.	3.3	34
64	GEOCHEMISTRY OF THE RIVER RHINE AND THE UPPER DANUBE: RECENT TRENDS AND LITHOLOGICAL INFLUENCE ON BASELINES. Journal of Environmental Science for Sustainable Society, 2007, 1, 39-46.	0.1	33
65	Terrestrial Sediments of the Earth: Development of a Global Unconsolidated Sediments Map Database (GUM). Geochemistry, Geophysics, Geosystems, 2018, 19, 997-1024.	2.5	33
66	Earthquake-induced structural deformations enhance long-term solute fluxes from active volcanic systems. Scientific Reports, 2018, 8, 14809.	3.3	33
67	Chemistry of the heavily urbanized Bagmati River system in Kathmandu Valley, Nepal: export of organic matter, nutrients, major ions, silica, and metals. Environmental Earth Sciences, 2014, 71, 911-922.	2.7	32
68	GOLUM-CNP v1.0: a data-driven modeling of carbon, nitrogen and phosphorus cycles in major terrestrial biomes. Geoscientific Model Development, 2018, 11, 3903-3928.	3.6	32
69	Is the climate change mitigation effect of enhanced silicate weathering governed by biological processes?. Global Change Biology, 2022, 28, 711-726.	9.5	32
70	Increasing biomass demand enlarges negative forest nutrient budget areas in wood export regions. Scientific Reports, 2018, 8, 5280.	3.3	31
71	A statistical procedure for the analysis of seismotectonically induced hydrochemical signals: A case study from the Eastern Carpathians, Romania. Tectonophysics, 2005, 405, 77-98.	2.2	30
72	Delineating the Continuum of Dissolved Organic Matter in Temperate River Networks. Global Biogeochemical Cycles, 2020, 34, e2019GB006495.	4.9	29

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73	Temperature and CO2 dependency of global carbonate weathering fluxes â€“ Implications for future carbonate weathering research. Chemical Geology, 2019, 527, 118874.	3.3	27
74	Ideas and perspectives: Synergies from co-deployment of negative emission technologies. Biogeosciences, 2019, 16, 2949-2960.	3.3	27
75	Increasing dissolved silica trends in the Rhine River: an effect of recovery from high P loads?. Limnology, 2011, 12, 63-73.	1.5	26
76	The influence of seismotectonics on precursory changes in groundwater composition for the 1995 Kobe earthquake, Japan. Hydrogeology Journal, 2006, 14, 1307-1318.	2.1	25
77	Enhanced Weathering Using Basalt Rock Powder: Carbon Sequestration, Co-benefits and Risks in a Mesocosm Study With Solanum tuberosum. Frontiers in Climate, 2022, 4, .	2.8	25
78	Impacts of enhanced weathering on biomass production for negative emission technologies and soil hydrology. Biogeosciences, 2020, 17, 2107-2133.	3.3	24
79	The impact of Eurasian dust storms and anthropogenic emissions on atmospheric nutrient deposition rates in forested Japanese catchments and adjacent regional seas. Global and Planetary Change, 2008, 61, 117-134.	3.5	23
80	Lithological composition of the North American continent and implications of lithological map resolution for dissolved silica flux modeling. Geochemistry, Geophysics, Geosystems, 2010, 11, .	2.5	21
81	Weather and seasonal climate prediction for flood planning in the Yangtze River Basin. Stochastic Environmental Research and Risk Assessment, 2005, 19, 428-437.	4.0	20
82	Long-term seismotectonic influence on the hydrochemical composition of a spring located at Koryaksky-Volcano, Kamchatka: deduced from aggregated earthquake information. International Journal of Earth Sciences, 2006, 95, 649-664.	1.8	20
83	Water input requirements of the rapidly shrinking Dead Sea. Die Naturwissenschaften, 2009, 96, 637-643.	1.6	20
84	Changes in dissolved silica mobilization into river systems draining North America until the period 2081â€“2100. Journal of Geochemical Exploration, 2011, 110, 31-39.	3.2	19
85	Inorganic Carbon Fluxes in the Inner Elbe Estuary, Germany. Estuaries and Coasts, 2015, 38, 192-210.	2.2	19
86	Highly Oxidizing Aqueous Environments on Early Mars Inferred From Scavenging Pattern of Trace Metals on Manganese Oxides. Journal of Geophysical Research E: Planets, 2019, 124, 1282-1295.	3.6	19
87	Managing Surface Water Contamination in Nagoya, Japan: An Integrated Water Basin Management Decision Framework. Water Resources Management, 2006, 20, 411-430.	3.9	18
88	A Global Data Analysis for Representing Sediment and Particulate Organic Carbon Yield in Earth System Models. Water Resources Research, 2017, 53, 10674-10700.	4.2	17
89	Retention of dissolved silica within the fluvial system of the conterminous USA. Biogeochemistry, 2013, 112, 637-659.	3.5	16
90	Transfer and transformations of oxygen in rivers as catchment reflectors of continental landscapes: A review. Earth-Science Reviews, 2021, 220, 103729.	9.1	16

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91	A Comprehensive Study of Silica Pools and Fluxes in Wadden Sea Salt Marshes. Estuaries and Coasts, 2013, 36, 1150-1164.	2.2	14
92	Impact of grazing management on silica export dynamics of Wadden Sea saltmarshes. Estuarine, Coastal and Shelf Science, 2013, 127, 1-11.	2.1	14
93	Spatial Variations in Pore-Water Biogeochemistry Greatly Exceed Temporal Changes During Baseflow Conditions in a Boreal River Valley Mire Complex, Northwest Russia. Wetlands, 2014, 34, 1171-1182.	1.5	14
94	Carbon Accounting for Enhanced Weathering. Frontiers in Climate, 2022, 4, .	2.8	14
95	Silica fluxes in the inner Elbe Estuary, Germany. Biogeochemistry, 2014, 118, 389-412.	3.5	13
96	Coupling of carbon and silicon geochemical cycles in rivers and lakes. Scientific Reports, 2016, 6, 35832.	3.3	13
97	Identifying potential repositories for radioactive waste: multiple criteria decision analysis and critical infrastructure systems. International Journal of Critical Infrastructures, 2005, 1, 404.	0.2	11
98	Difference information criterion for the analysis of a seismotectonic influence on a radon time-series at the KSM site, Japan. Geophysical Journal International, 2005, 160, 891-900.	2.4	11
99	Silica Dynamics of Tidal Marshes in the Inner Elbe Estuary, Germany. Silicon, 2013, 5, 75-89.	3.3	11
100	Aging of basalt volcanic systems and decreasing CO₂ consumption by weathering. Earth Surface Dynamics, 2019, 7, 191-197.	2.4	11
101	Chemical Weathering of Loess and Its Contribution to Global Alkalinity Fluxes to the Coastal Zone During the Last Glacial Maximum, Midâ€Holocene, and Present. Geochemistry, Geophysics, Geosystems, 2020, 21, e2020GC008922.	2.5	11
102	A model for evaluating continental chemical weathering from riverine transports of dissolved major elements at a global scale. Global and Planetary Change, 2020, 192, 103226.	3.5	9
103	Seasonal variations of biogeochemical matter export along the Langtang-Narayani river system in central Himalaya. Geochimica Et Cosmochimica Acta, 2018, 238, 208-234.	3.9	8
104	Plate tectonics, carbon, and climate. Science, 2019, 364, 126-127.	12.6	7
105	Hydrothermal and magmatic contributions to surface waters in the Aso caldera, southern Japan: Implications for weathering processes in volcanic areas. Chemical Geology, 2022, 588, 120612.	3.3	7
106	Running out of gas: Zircon 18O-Hf-U/Pb evidence for Snowball Earth preconditioned by low degassing. Geochemical Perspectives Letters, 0, , 41-46.	5.0	5
107	Method of evaluating nutrient loads through the atmosphere onto lakes. Desalination, 2008, 226, 190-199.	8.2	4
108	Reply to Schuiling et al.: Different processes at work. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, .	7.1	4

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109	Silicon isotope composition of dissolved silica in surface waters of the Elbe Estuary and its tidal marshes. Biogeochemistry, 2015, 124, 61-79.	3.5	4
110	Reassessing riverine carbon dioxide emissions from the Indian subcontinent. Science of the Total Environment, 2022, 816, 151610.	8.0	3
111	Compatibility of space and time for modeling fluvial fluxes â€“ A comparison. Applied Geochemistry, 2011, 26, S295-S297.	3.0	2
112	Oxygen isotopic alteration rate of continental crust recorded by detrital zircon and its implication for deep-time weathering. Earth and Planetary Science Letters, 2022, 578, 117292.	4.4	2
113	Using PRTR database for the assessment of surface water risk and improvement of monitoring in Japan. International Journal of Critical Infrastructures, 2005, 1, 155.	0.2	1
114	Natural disasters and nuclear critical infrastructure negotiations: conflict resolution in Turkey. International Journal of Critical Infrastructures, 2005, 1, 367.	0.2	1
115	Coupling spatial geochemical and lithological information to distinguish silicate and non-silicate chemical weathering fluxes. Applied Geochemistry, 2011, 26, S281-S284.	3.0	1
116	Salt marshes in the silica budget of the North Sea. Continental Shelf Research, 2014, 82, 31-36.	1.8	1
117	Short Communication: Aging of basalt volcanic systems and decreasing CO₂ consumption by weathering. , 0, , .		1
118	Environmental Impactsâ€"Freshwater Biogeochemistry. Regional Climate Studies, 2015, , 307-336.	1.2	1
119	The Overlooked Compartment of the Critical-zone-complex, Considering the Evolution of Future Geogenic Matter Fluxes: Agricultural Topsoils. Procedia Earth and Planetary Science, 2014, 10, 339-342.	0.6	0
120	Sulfate sulfur isotopes and major ion chemistry reveal that pyrite oxidation counteracts CO₂ drawdown from silicate weathering in the Langtang-Trisuli-Narayani River system, Nepal Himalaya. , 2021, , .		0