Dieter Gerten

List of Publications by Year
in descending order

132 papers	26,669 citations	13099 68 h-index	14208 128 g-index
142 all docs	142 docs citations	142 times ranked	25875 citing authors

#	Article	IF	Citations
1	A planetary boundary for green water. Nature Reviews Earth & Environment, 2022, 3, 380-392.	29.7	95
2	The timing of unprecedented hydrological drought under climate change. Nature Communications, 2022, 13, .	12.8	77
3	Globally widespread and increasing violations of environmental flow envelopes. Hydrology and Earth System Sciences, 2022, 26, 3315-3336.	4.9	11
4	Global terrestrial water storage and drought severity under climate change. Nature Climate Change, 2021, 11, 226-233.	18.8	345
5	Irrigation of biomass plantations may globally increase water stress more than climate change. Nature Communications, 2021, 12, 1512.	12.8	54
6	Global scenarios of irrigation water abstractions for bioenergy production: a systematic review. Hydrology and Earth System Sciences, 2021, 25, 1711-1726.	4.9	8
7	Validity of estimating flood and drought characteristics under equilibrium climates from transient simulations. Environmental Research Letters, 2021, 16, 104028.	5.2	4
8	Feeding the world in a narrowing safe operating space. One Earth, 2021, 4, 1193-1196.	6.8	6
9	Illuminating water cycle modifications and Earth system resilience in the Anthropocene. Water Resources Research, 2020, 56, e2019WR024957.	4.2	86
10	Human impacts on planetary boundaries amplified by Earth system interactions. Nature Sustainability, 2020, 3, 119-128.	23.7	217
11	How evaluation of global hydrological models can help to improve credibility of river discharge projections under climate change. Climatic Change, 2020, 163, 1353-1377.	3.6	25
12	Projecting Exposure to Extreme Climate Impact Events Across Six Event Categories and Three Spatial Scales. Earth's Future, 2020, 8, e2020EF001616.	6.3	69
13	Water Use in Global Livestock Productionâ€"Opportunities and Constraints for Increasing Water Productivity. Water Resources Research, 2020, 56, e2019WR026995.	4.2	66
14	Historical and future changes in global flood magnitude â€" evidence from a modelâ€"observation investigation. Hydrology and Earth System Sciences, 2020, 24, 1543-1564.	4.9	40
15	The Water Planetary Boundary: Interrogation and Revision. One Earth, 2020, 2, 223-234.	6.8	98
16	Giving Legs to Handprint Thinking: Foundations for Evaluating the Good We Do. Earth's Future, 2020, 8, e2019EF001422.	6.3	11
17	Integrating the Water Planetary Boundary With Water Management From Local to Global Scales. Earth's Future, 2020, 8, e2019EF001377.	6.3	65
18	Feeding ten billion people is possible within four terrestrial planetary boundaries. Nature Sustainability, 2020, 3, 200-208.	23.7	306

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19	Producing Policy-relevant Science by Enhancing Robustness and Model Integration for the Assessment of Global Environmental Change. Environmental Modelling and Software, 2019, 111, 248-258.	4.5	4
20	Exploring the value of machine learning for weighted multi-model combination of an ensemble of global hydrological models. Environmental Modelling and Software, 2019, 114, 112-128.	4.5	36
21	Freshwater requirements of large-scale bioenergy plantations for limiting global warming to 1.5 Â°C. Environmental Research Letters, 2019, 14, 084001.	5.2	25
22	Freshwater resources under success and failure of the Paris climate agreement. Earth System Dynamics, 2019, 10, 205-217.	7.1	15
23	State-of-the-art global models underestimate impacts from climate extremes. Nature Communications, 2019, 10, 1005.	12.8	168
24	Pyrogenic carbon capture and storage. GCB Bioenergy, 2019, 11, 573-591.	5.6	95
25	Temporal and spatial scales of water temperature variability as an indicator for mixing in a polymictic lake. Inland Waters, 2018, 8, 82-95.	2.2	11
26	Biomass-based negative emissions difficult to reconcile with planetary boundaries. Nature Climate Change, 2018, 8, 151-155.	18.8	207
27	The Biosphere Under Potential Paris Outcomes. Earth's Future, 2018, 6, 23-39.	6.3	12
28	Two-thirds of global cropland area impacted by climate oscillations. Nature Communications, 2018, 9, 1257.	12.8	66
29	Human impact parameterizations in global hydrological models improve estimates of monthly discharges and hydrological extremes: a multi-model validation study. Environmental Research Letters, 2018, 13, 055008.	5.2	91
30	How the performance of hydrological models relates to credibility of projections under climate change. Hydrological Sciences Journal, 2018, 63, 696-720.	2.6	133
31	Risks for the global freshwater system at 1.5â€‰Â°C and 2â€‰Â°C global warming. Environmental Research Letters, 2018, 13, 044038.	5.2	66
32	Biogeochemical potential of biomass pyrolysis systems for limiting global warming to 1.5â€‰Â°C. Environmental Research Letters, 2018, 13, 044036.	5.2	48
33	LPJmL4 â€“ a dynamic global vegetation model with managed land â€“ PartÂ 1: Model description. Geoscientific Model Development, 2018, 11, 1343-1375.	3.6	140
34	Biomass production in plantations: Land constraints increase dependency on irrigation water. GCB Bioenergy, 2018, 10, 628-644.	5.6	15
35	Worldwide evaluation of mean and extreme runoff from six global-scale hydrological models that account for human impacts. Environmental Research Letters, 2018, 13, 065015.	5.2	85
36	LPJmL4 â€“ a dynamic global vegetation model with managed land â€“ PartÂ 2: Model evaluation. Geoscientific Model Development, 2018, 11, 1377-1403.	3.6	57

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37	Reconstruction of global gridded monthly sectoral water withdrawals for 1971â€“2010 and analysis of their spatiotemporal patterns. Hydrology and Earth System Sciences, 2018, 22, 2117-2133.	4.9	106
38	On deeper human dimensions in Earth system analysis and modelling. Earth System Dynamics, 2018, 9, 849-863.	7.1	7
39	Crossâ€scale intercomparison of climate change impacts simulated by regional and global hydrological models in eleven large river basins. Climatic Change, 2017, 141, 561-576.	3.6	137
40	Multimodel uncertainty changes in simulated river flows induced by human impact parameterizations. Environmental Research Letters, 2017, 12, 025009.	5.2	33
41	Tradeâ€offs for food production, nature conservation and climate limit the terrestrial carbon dioxide removal potential. Global Change Biology, 2017, 23, 4303-4317.	9.5	44
42	Impacts of climate change on European hydrology at 1.5, 2 and 3 degrees mean global warming above preindustrial level. Climatic Change, 2017, 143, 13-26.	3.6	193
43	The limits to globalâ€warming mitigation by terrestrial carbon removal. Earth's Future, 2017, 5, 463-474.	6.3	92
44	Reconciling irrigated food production with environmental flows for Sustainable Development Goals implementation. Nature Communications, 2017, 8, 15900.	12.8	168
45	The critical role of the routing scheme in simulating peak river discharge in global hydrological models. Environmental Research Letters, 2017, 12, 075003.	5.2	105
46	Towards a comprehensive climate impacts assessment of solar geoengineering. Earth's Future, 2017, 5, 93-106.	6.3	45
47	Bringing it all together: linking measures to secure nationsâ€™ food supply. Current Opinion in Environmental Sustainability, 2017, 29, 98-117.	6.3	47
48	The Challenges of Applying Planetary Boundaries as a Basis for Strategic Decision-Making in Companies with Global Supply Chains. Sustainability, 2017, 9, 279.	3.2	78
49	Safe, just and sufficient space. , 2017, , 109-130.		5
50	Integrated crop water management might sustainably halve the global food gap. Environmental Research Letters, 2016, 11, 025002.	5.2	182
51	Impacts devalue the potential of large-scale terrestrial CO ₂ removal through biomass plantations. Environmental Research Letters, 2016, 11, 095010.	5.2	19
52	Regional disparities in the beneficial effects of rising CO2 concentrations on crop waterÂproductivity. Nature Climate Change, 2016, 6, 786-790.	18.8	190
53	Causes and trends of water scarcity in food production. Environmental Research Letters, 2016, 11, 015001.	5.2	93
54	Tradeâ€offs between land and water requirements for largeâ€scale bioenergy production. GCB Bioenergy, 2016, 8, 11-24.	5.6	108

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55	Tamm Review: Observed and projected climate change impacts on Russiaâ€™s forests and its carbon balance. Forest Ecology and Management, 2016, 361, 432-444.	3.2	104
56	Is extensive terrestrial carbon dioxide removal a â€˜greenâ€™ form of geoengineering? A global modelling study. Global and Planetary Change, 2016, 137, 123-130.	3.5	48
57	Influence of human activities and climate variability on green and blue water provision in the Heihe River Basin, NW China. Journal of Water and Climate Change, 2015, 6, 800-815.	2.9	20
58	Water savings potentials of irrigation systems: global simulation of processes and linkages. Hydrology and Earth System Sciences, 2015, 19, 3073-3091.	4.9	264
59	Response to Comment on â€œPlanetary boundaries: Guiding human development on a changing planetâ€• Science, 2015, 348, 1217-1217.	12.6	69
60	Planetary boundaries: Guiding human development on a changing planet. Science, 2015, 347, 1259855.	12.6	7,124
61	Emulating global climate change impacts on crop yields. Statistical Modelling, 2015, 15, 499-525.	1.1	27
62	Consensus building on the development of a stress-based indicator for LCA-based impact assessment of water consumption: outcome of the expert workshops. International Journal of Life Cycle Assessment, 2015, 20, 577-583.	4.7	84
63	Three centuries of dual pressure from land use and climate change on the biosphere. Environmental Research Letters, 2015, 10, 044011.	5.2	50
64	Ethical aspects in the economic modeling of water policy options. Global Environmental Change, 2015, 30, 80-91.	7.8	13
65	Grand Challenges Related to the Assessment of Climate Change Impacts on Freshwater Resources. Journal of Hydrologic Engineering - ASCE, 2015, 20, .	1.9	17
66	Water footprints of cities â€“ indicators for sustainable consumption and production. Hydrology and Earth System Sciences, 2014, 18, 213-226.	4.9	69
67	Climate-driven interannual variability of water scarcity in food production potential: a global analysis. Hydrology and Earth System Sciences, 2014, 18, 447-461.	4.9	101
68	Climate impact research: beyond patchwork. Earth System Dynamics, 2014, 5, 399-408.	7.1	29
69	A highâ€resolution approach to estimating ecosystem respiration at continental scales using operational satellite data. Global Change Biology, 2014, 20, 1191-1210.	9.5	40
70	Constraints and potentials of future irrigation water availability on agricultural production under climate change. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 3239-3244.	7.1	795
71	Hydrological droughts in the 21st century, hotspots and uncertainties from a global multimodel ensemble experiment. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 3262-3267.	7.1	583
72	Multimodel assessment of water scarcity under climate change. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 3245-3250.	7.1	1,282

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73	Linking groundwater use and stress to specific crops using the groundwater footprint in the Central Valley and High Plains aquifer systems, U.S.. Water Resources Research, 2014, 50, 4953-4973.	4.2	22
74	Future water resources for food production in five South Asian river basins and potential for adaptation â€” A modeling study. Science of the Total Environment, 2013, 468-469, S117-S131.	8.0	78
75	Towards a revised planetary boundary for consumptive freshwater use: role of environmental flow requirements. Current Opinion in Environmental Sustainability, 2013, 5, 551-558.	6.3	229
76	Spatial decoupling of agricultural production and consumption: quantifying dependences of countries on food imports due to domestic land and water constraints. Environmental Research Letters, 2013, 8, 014046.	5.2	240
77	Climate impacts on global irrigation requirements under 19 GCMs, simulated with a vegetation and hydrology model. Hydrological Sciences Journal, 2013, 58, 88-105.	2.6	89
78	A new climate dataset for systematic assessments of climate change impacts as a function of global warming. Geoscientific Model Development, 2013, 6, 1689-1703.	3.6	24
79	Critical impacts of global warming on land ecosystems. Earth System Dynamics, 2013, 4, 347-357.	7.1	32
80	Asynchronous exposure to global warming: freshwater resources and terrestrial ecosystems. Environmental Research Letters, 2013, 8, 034032.	5.2	52
81	Contribution of permafrost soils to the global carbon budget. Environmental Research Letters, 2013, 8, 014026.	5.2	148
82	Multimodel projections and uncertainties of irrigation water demand under climate change. Geophysical Research Letters, 2013, 40, 4626-4632.	4.0	302
83	Blue water scarcity and the economic impacts of future agricultural trade and demand. Water Resources Research, 2013, 49, 3601-3617.	4.2	52
84	Potential effects of climate change on inundation patterns in the Amazon Basin. Hydrology and Earth System Sciences, 2013, 17, 2247-2262.	4.9	51
85	A vital link: water and vegetation in the Anthropocene. Hydrology and Earth System Sciences, 2013, 17, 3841-3852.	4.9	25
86	A model-based constraint on CO₂ fertilisation. Biogeosciences, 2013, 10, 339-355.	3.3	35
87	Sozialwissenschaftliche Klimaforschung: Mehr Visionen wagen!Social Sciences on Climate Change: Dare to Be More Visionary!. Gaia, 2013, 22, 156-159.	0.7	0
88	Comparing Large-Scale Hydrological Model Simulations to Observed Runoff Percentiles in Europe. Journal of Hydrometeorology, 2012, 13, 604-620.	1.9	135
89	Detection and Attribution of Changes in Water Resources. , 2012, , 422-434.		2
90	Windows of change: temporal scale of analysis is decisive to detect ecosystem responses to climate change. Marine Biology, 2012, 159, 2533-2542.	1.5	25

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91	To bloom or not to bloom: contrasting responses of cyanobacteria to recent heat waves explained by critical thresholds of abiotic drivers. Oecologia, 2012, 169, 245-256.	2.0	127
92	Climate Change and Water Supply. , 2012, , 19-32.		4
93	Impact of reservoirs on river discharge and irrigation water supply during the 20th century. Water Resources Research, 2011, 47, .	4.2	340
94	Internal and external green-blue agricultural water footprints of nations, and related water and land savings through trade. Hydrology and Earth System Sciences, 2011, 15, 1641-1660.	4.9	183
95	Multimodel Estimate of the Global Terrestrial Water Balance: Setup and First Results. Journal of Hydrometeorology, 2011, 12, 869-884.	1.9	466
96	Risk of severe climate change impact on the terrestrial biosphere. Environmental Research Letters, 2011, 6, 034036.	5.2	65
97	The economic potential of bioenergy for climate change mitigation with special attention given to implications for the land system. Environmental Research Letters, 2011, 6, 034017.	5.2	159
98	Global Water Availability and Requirements for Future Food Production. Journal of Hydrometeorology, 2011, 12, 885-899.	1.9	233
99	Impact of a Statistical Bias Correction on the Projected Hydrological Changes Obtained from Three GCMs and Two Hydrology Models. Journal of Hydrometeorology, 2011, 12, 556-578.	1.9	334
100	Greening the global water system. Journal of Hydrology, 2010, 384, 177-186.	5.4	162
101	Virtual water content of temperate cereals and maize: Present and potential future patterns. Journal of Hydrology, 2010, 384, 218-231.	5.4	219
102	Assessing 20th century climateâ€“vegetation feedbacks of landâ€use change and natural vegetation dynamics in a fully coupled vegetationâ€“climate model. International Journal of Climatology, 2010, 30, 2055-2065.	3.5	70
103	Efficient parallelization of a dynamic global vegetation model with river routing. Environmental Modelling and Software, 2010, 25, 685-690.	4.5	17
104	A matter of timing: heat wave impact on crustacean zooplankton. Freshwater Biology, 2010, 55, 1769-1779.	2.4	29
105	Recent decline in the global land evapotranspiration trend due to limited moisture supply. Nature, 2010, 467, 951-954.	27.8	1,771
106	Effects of Precipitation Uncertainty on Discharge Calculations for Main River Basins. Journal of Hydrometeorology, 2009, 10, 1011-1025.	1.9	195
107	Future water availability for global food production: The potential of green water for increasing resilience to global change. Water Resources Research, 2009, 45, .	4.2	521
108	Global potential to increase crop production through water management in rainfed agriculture. Environmental Research Letters, 2009, 4, 044002.	5.2	134

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109	Climatic Change, Aquatic Science, Multiple Shifts in Paradigms. International Review of Hydrobiology, 2008, 93, 397-403.	0.9	7
110	Modeled interactive effects of precipitation, temperature, and [CO₂] on ecosystem carbon and water dynamics in different climatic zones. Global Change Biology, 2008, 14, 1986-1999.	9.5	277
111	Modelled effects of precipitation on ecosystem carbon and water dynamics in different climatic zones. Global Change Biology, 2008, 14, 2365-2379.	9.5	112
112	Agricultural green and blue water consumption and its influence on the global water system. Water Resources Research, 2008, 44, .	4.2	665
113	Causes of change in 20th century global river discharge. Geophysical Research Letters, 2008, 35, .	4.0	215
114	Phytoplankton response to climate warming modified by trophic state. Limnology and Oceanography, 2008, 53, 1-13.	3.1	105
115	Effects of soil freezing and thawing on vegetation carbon density in Siberia: A modeling analysis with the Lund-Potsdam-Jena Dynamic Global Vegetation Model (LPJ-DGVM). Global Biogeochemical Cycles, 2007, 21, .	4.9	72
116	Modelling the role of agriculture for the 20th century global terrestrial carbon balance. Global Change Biology, 2007, 13, 679-706.	9.5	1,133
117	Potential future changes in water limitations of the terrestrial biosphere. Climatic Change, 2007, 80, 277-299.	3.6	79
118	Life-history traits of lake plankton species may govern their phenological response to climate warming. Global Change Biology, 2006, 12, 652-661.	9.5	225
119	Terrestrial biosphere carbon storage under alternative climate projections. Climatic Change, 2006, 74, 97-122.	3.6	140
120	Global effects of doubled atmospheric CO2 content on evapotranspiration, soil moisture and runoff under potential natural vegetation. Hydrological Sciences Journal, 2006, 51, 171-185.	2.6	74
121	Contemporary â€œgreenâ€• water flows: Simulations with a dynamic global vegetation and water balance model. Physics and Chemistry of the Earth, 2005, 30, 334-338.	2.9	88
122	Hydrologic resilience of the terrestrial biosphere. Geophysical Research Letters, 2005, 32, .	4.0	38
123	Terrestrial vegetation and water balanceâ€"hydrological evaluation of a dynamic global vegetation model. Journal of Hydrology, 2004, 286, 249-270.	5.4	783
124	Evaluation of the agreement between the first global remotely sensed soil moisture data with model and precipitation data. Journal of Geophysical Research, 2003, 108, .	3.3	265
125	Minimal algal food requirements in the presence of protozoan prey for the rotifer Brachionus calyciflorus. Journal of Plankton Research, 2002, 24, 723-728.	1.8	2
126	Effects of Climate Warming, North Atlantic Oscillation, and El NiÃ±o-Southern Oscillation on Thermal Conditions and Plankton Dynamics in Northern Hemispheric Lakes. Scientific World Journal, The, 2002, 2, 586-606.	2.1	94

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127	Responses of lake temperatures to diverse North Atlantic Oscillation indices. Verhandlungen Der Internationalen Vereinigung Fur Theoretische Und Angewandte Limnologie International Association of Theoretical and Applied Limnology, 2002, 28, 1593-1596.	0.1	1
128	Species-specific changes in the phenology and peak abundance of freshwater copepods in response to warm summers. Freshwater Biology, 2002, 47, 2163-2173.	2.4	70
129	Differences in the persistency of the North Atlantic Oscillation signal among lakes. Limnology and Oceanography, 2001, 46, 448-455.	3.1	130
130	Climateâ€driven changes in spring plankton dynamics and the sensitivity of shallow polymictic lakes to the North Atlantic Oscillation. Limnology and Oceanography, 2000, 45, 1058-1066.	3.1	243
131	Freshwater Resources. , 0, , 229-270.		16
132	Terrestrial and Inland Water Systems. , 0, , 271-360.		25