Reimund Paul RÃ¶tter

List of Publications by Year
in descending order

119 papers	10,950 citations	44069 48 h-index	31849 101 g-index
130 all docs	130 docs citations	130 times ranked	8443 citing authors

#	Article	IF	Citations
1	Rising temperatures reduce global wheatÂproduction. Nature Climate Change, 2015, 5, 143-147.	18.8	1,544
2	Uncertainty in simulating wheat yields under climate change. Nature Climate Change, 2013, 3, 827-832.	18.8	1,021
3	Adverse weather conditions for European wheat production will become more frequent with climate change. Nature Climate Change, 2014, 4, 637-643.	18.8	452
4	Simulation of winter wheat yield and its variability in different climates of Europe: A comparison of eight crop growth models. European Journal of Agronomy, 2011, 35, 103-114.	4.1	408
5	Multimodel ensembles of wheat growth: many models are better than one. Global Change Biology, 2015, 21, 911-925.	9.5	387
6	Similar estimates of temperature impacts on global wheat yield by three independent methods. Nature Climate Change, 2016, 6, 1130-1136.	18.8	352
7	Agroclimatic conditions in Europe under climate change. Global Change Biology, 2011, 17, 2298-2318.	9.5	315
8	Climate change impact and adaptation for wheat protein. Global Change Biology, 2019, 25, 155-173.	9.5	312
9	Cropâ€“climate models need an overhaul. Nature Climate Change, 2011, 1, 175-177.	18.8	295
10	Simulation of spring barley yield in different climatic zones of Northern and Central Europe: A comparison of nine crop models. Field Crops Research, 2012, 133, 23-36.	5.1	269
11	Crop modelling for integrated assessment of risk to food production from climate change. Environmental Modelling and Software, 2015, 72, 287-303.	4.5	230
12	The uncertainty of crop yield projections is reduced by improved temperature response functions. Nature Plants, 2017, 3, 17102.	9.3	170
13	Climate Change Effects on Plant Growth, Crop Yield and Livestock. Climatic Change, 1999, 43, 651-681.	3.6	165
14	Responses of wheat growth and yield to climate change in different climate zones of China, 1981â€“2009. Agricultural and Forest Meteorology, 2014, 189-190, 91-104.	4.8	149
15	Contribution of crop model structure, parameters and climate projections to uncertainty in climate change impact assessments. Global Change Biology, 2018, 24, 1291-1307.	9.5	149
16	Implication of crop model calibration strategies for assessing regional impacts of climate change in Europe. Agricultural and Forest Meteorology, 2013, 170, 32-46.	4.8	148
17	Use of crop simulation modelling to aid ideotype design of future cereal cultivars. Journal of Experimental Botany, 2015, 66, 3463-3476.	4.8	146
18	Changes in time of sowing, flowering and maturity of cereals in Europe under climate change. Food Additives and Contaminants - Part A Chemistry, Analysis, Control, Exposure and Risk Assessment, 2012, 29, 1527-1542.	2.3	135

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19	Crop rotation modellingâ€"A European model intercomparison. European Journal of Agronomy, 2015, 70, 98-111.	4.1	125
20	Temperature and precipitation effects on wheat yield across a European transect: a crop model ensemble analysis using impact response surfaces. Climate Research, 2015, 65, 87-105.	1.1	122
21	Analysis and classification of data sets for calibration and validation of agro-ecosystem models. Environmental Modelling and Software, 2015, 72, 402-417.	4.5	112
22	Multimodel ensembles improve predictions of cropâ€"environmentâ€"management interactions. Global Change Biology, 2018, 24, 5072-5083.	9.5	111
23	Mapping disruption and resilience mechanisms in food systems. Food Security, 2020, 12, 695-717.	5.3	111
24	Crop model improvement reduces the uncertainty of the response to temperature of multi-model ensembles. Field Crops Research, 2017, 202, 5-20.	5.1	109
25	Global wheat production with 1.5 and 2.0Â°C above preâ€industrial warming. Global Change Biology, 2019, 25, 1428-1444.	9.5	107
26	Mitigation efforts will not fully alleviate the increase in water scarcity occurrence probability in wheat-producing areas. Science Advances, 2019, 5, eaau2406.	10.3	104
27	Exploring climate change impacts and adaptation options for maize production in the Central Rift Valley of Ethiopia using different climate change scenarios and crop models. Climatic Change, 2015, 129, 145-158.	3.6	102
28	Climate variability and change in the Central Rift Valley of Ethiopia: challenges for rainfed crop production. Journal of Agricultural Science, 2014, 152, 58-74.	1.3	98
29	Climate-induced yield variability and yield gaps of maize (Zea mays L.) in the Central Rift Valley of Ethiopia. Field Crops Research, 2014, 160, 41-53.	5.1	97
30	Maize growing duration was prolonged across China in the past three decades under the combined effects of temperature, agronomic management, and cultivar shift. Global Change Biology, 2014, 20, 3686-3699.	9.5	95
31	What would happen to barley production in Finland if global warming exceeded 4Â°C? A model-based assessment. European Journal of Agronomy, 2011, 35, 205-214.	4.1	94
32	Wheat yield benefited from increases in minimum temperature in the Huang-Huai-Hai Plain of China in the past three decades. Agricultural and Forest Meteorology, 2017, 239, 1-14.	4.8	84
33	Designing future barley ideotypes using a crop model ensemble. European Journal of Agronomy, 2017, 82, 144-162.	4.1	84
34	Adapting to Climate Variability and Change: Experiences from Cereal-Based Farming in the Central Rift and Kobo Valleys, Ethiopia. Environmental Management, 2013, 52, 1115-1131.	2.7	82
35	Sensitivities of crop models to extreme weather conditions during flowering period demonstrated for maize and winter wheat in Austria. Journal of Agricultural Science, 2013, 151, 813-835.	1.3	82
36	Cocoa agroforestry is less resilient to subâ€optimal and extreme climate than cocoa in full sun. Global Change Biology, 2018, 24, 273-286.	9.5	82

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37	Linking modelling and experimentation to better capture crop impacts of agroclimatic extremesâ€"A review. Field Crops Research, 2018, 221, 142-156.	5.1	80
38	Sensitivity of barley varieties to weather in Finland. Journal of Agricultural Science, 2012, 150, 145-160.	1.3	79
39	Impact of Spatial Soil and Climate Input Data Aggregation on Regional Yield Simulations. PLoS ONE, 2016, 11, e0151782.	2.5	78
40	Modelling shifts in agroclimate and crop cultivar response under climate change. Ecology and Evolution, 2013, 3, 4197-4214.	1.9	72
41	Comparing the performance of 11 crop simulation models in predicting yield response to nitrogen fertilization. Journal of Agricultural Science, 2016, 154, 1218-1240.	1.3	70
42	Adaptation response surfaces for managing wheat under perturbed climate and CO2 in a Mediterranean environment. Agricultural Systems, 2018, 159, 260-274.	6.1	68
43	How accurately do maize crop models simulate the interactions of atmospheric CO2 concentration levels with limited water supply on water use and yield?. European Journal of Agronomy, 2018, 100, 67-75.	4.1	68
44	The integrated modeling system STONE for calculating nutrient emissions from agriculture in the Netherlands. Environmental Modelling and Software, 2003, 18, 597-617.	4.5	66
45	Temporal and spatial changes of maize yield potentials and yield gaps in the past three decades in China. Agriculture, Ecosystems and Environment, 2015, 208, 12-20.	5.3	66
46	Lessons from climate modeling on the design and use of ensembles for crop modeling. Climatic Change, 2016, 139, 551-564.	3.6	66
47	Shifts in comparative advantages for maize, oat and wheat cropping under climate change in Europe. Food Additives and Contaminants - Part A Chemistry, Analysis, Control, Exposure and Risk Assessment, 2012, 29, 1514-1526.	2.3	63
48	Characteristic â€˜fingerprintsâ€™ of crop model responses to weather input data at different spatial resolutions. European Journal of Agronomy, 2013, 49, 104-114.	4.1	51
49	Multi-wheat-model ensemble responses to interannual climate variability. Environmental Modelling and Software, 2016, 81, 86-101.	4.5	50
50	Impacts of heat stress on leaf area index and growth duration of winter wheat in the North China Plain. Field Crops Research, 2018, 222, 230-237.	5.1	48
51	Uncertainty of wheat water use: Simulated patterns and sensitivity to temperature and CO2. Field Crops Research, 2016, 198, 80-92.	5.1	47
52	Classifying multi-model wheat yield impact response surfaces showing sensitivity to temperature and precipitation change. Agricultural Systems, 2018, 159, 209-224.	6.1	47
53	Variations in yield response to fertilizer application in the tropics: II. Risks and opportunities for smallholders cultivating maize on Kenya's arable land. Agricultural Systems, 1997, 53, 69-95.	6.1	44
54	Changing regional weather-crop yield relationships across Europe between 1901 and 2012. Climate Research, 2016, 70, 195-214.	1.1	44

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55	Historical data provide new insights into response and adaptation of maize production systems to climate change/variability in China. Field Crops Research, 2016, 185, 1-11.	5.1	43
56	Performance of process-based models for simulation of grain N in crop rotations across Europe. Agricultural Systems, 2017, 154, 63-77.	6.1	43
57	Effect of weather data aggregation on regional crop simulation for different crops, production conditions, and response variables. Climate Research, 2015, 65, 141-157.	1.1	43
58	Dynamic economic modelling of crop rotations with farm management practices under future pest pressure. Agricultural Systems, 2016, 144, 65-76.	6.1	41
59	Cultivating resilience by empirically revealing response diversity. Global Environmental Change, 2014, 25, 186-193.	7.8	40
60	Progress in modelling agricultural impacts of and adaptations to climate change. Current Opinion in Plant Biology, 2018, 45, 255-261.	7.1	39
61	Variability of effects of spatial climate data aggregation on regional yield simulation by crop models. Climate Research, 2015, 65, 53-69.	1.1	39
62	The benefits of conservation agriculture on soil organic carbon and yield in southern Africa are site-specific. Soil and Tillage Research, 2018, 183, 72-82.	5.6	38
63	How does inter-annual variability of attainable yield affect the magnitude of yield gaps for wheat and maize? An analysis at ten sites. Agricultural Systems, 2018, 159, 199-208.	6.1	36
64	Simulation of nitrogen leaching in sandy soils in The Netherlands with the ANIMO model and the integrated modelling system STONE. Agriculture, Ecosystems and Environment, 2005, 105, 523-540.	5.3	35
65	Spatial sampling of weather data for regional crop yield simulations. Agricultural and Forest Meteorology, 2016, 220, 101-115.	4.8	35
66	Multi-model uncertainty analysis in predicting grain N for crop rotations in Europe. European Journal of Agronomy, 2017, 84, 152-165.	4.1	35
67	Implications of crop model ensemble size and composition for estimates of adaptation effects and agreement of recommendations. Agricultural and Forest Meteorology, 2019, 264, 351-362.	4.8	35
68	Why do crop models diverge substantially in climate impact projections? A comprehensive analysis based on eight barley crop models. Agricultural and Forest Meteorology, 2020, 281, 107851.	4.8	35
69	Priority questions in multidisciplinary drought research. Climate Research, 2018, 75, 241-260.	1.1	35
70	Heat stress impacts on wheat growth and yield were reduced in the Huang-Huai-Hai Plain of China in the past three decades. European Journal of Agronomy, 2015, 71, 44-52.	4.1	33
71	TechnoGIN, a tool for exploring and evaluating resource use efficiency of cropping systems in East and Southeast Asia. Agricultural Systems, 2006, 87, 80-100.	6.1	32
72	A statistical analysis of three ensembles of crop model responses to temperature and CO2 concentration. Agricultural and Forest Meteorology, 2015, 214-215, 483-493.	4.8	31

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73	Variations in yield gaps of smallholder cocoa systems and the main determining factors along a climate gradient in Ghana. Agricultural Systems, 2020, 181, 102812.	6.1	31
74	To bias correct or not to bias correct? An agricultural impact modelersâ€™ perspective on regional climate model data. Agricultural and Forest Meteorology, 2021, 304-305, 108406.	4.8	31
75	Global wheat production could benefit from closing the genetic yield gap. Nature Food, 2022, 3, 532-541.	14.0	29
76	â€˜Fingerprintsâ€™ of four crop models as affected by soil input data aggregation. European Journal of Agronomy, 2014, 61, 35-48.	4.1	28
77	The implication of input data aggregation on up-scaling soil organic carbon changes. Environmental Modelling and Software, 2017, 96, 361-377.	4.5	28
78	Estimating model prediction error: Should you treat predictions as fixed or random?. Environmental Modelling and Software, 2016, 84, 529-539.	4.5	27
79	Evaluating the precision of eight spatial sampling schemes in estimating regional means of simulated yield for two crops. Environmental Modelling and Software, 2016, 80, 100-112.	4.5	26
80	Simulating medium-term effects of cropping system diversification on soil fertility and crop productivity in southern Africa. European Journal of Agronomy, 2020, 119, 126089.	4.1	23
81	Variability in crop yields associated with climate anomalies in China over the past three decades. Regional Environmental Change, 2016, 16, 1715-1723.	2.9	21
82	Fertilizer management in smallholder cocoa farms of Indonesia under variable climate and market prices. Agricultural Systems, 2020, 178, 102759.	6.1	21
83	Cultivar diversity has great potential to increase yield of feed barley. Agronomy for Sustainable Development, 2013, 33, 519-530.	5.3	20
84	Water use of Coffea arabica in open versus shaded systems under smallholderâ€™s farm conditions in Eastern Uganda. Agricultural and Forest Meteorology, 2019, 266-267, 231-242.	4.8	20
85	Maizeâ€“lablab intercropping is promising in supporting the sustainable intensification of smallholder cropping systems under high climate risk in southern Africa. Experimental Agriculture, 2020, 56, 104-117.	0.9	20
86	Effects of climate and historical adaptation measures on barley yield trends in Finland. Climate Research, 2015, 65, 221-236.	1.1	20
87	Variations in yield response to fertilizer application in the tropics: I. Quantifying risks and opportunities for smallholders based on crop growth simulation. Agricultural Systems, 1997, 53, 41-68.	6.1	19
88	Using impact response surfaces to analyse the likelihood of impacts on crop yield under probabilistic climate change. Agricultural and Forest Meteorology, 2019, 264, 213-224.	4.8	19
89	Effect of cropping system, shade cover and altitudinal gradient on coffee yield components at Mt. Elgon, Uganda. Agriculture, Ecosystems and Environment, 2020, 295, 106887.	5.3	19
90	Nutrient emission models in environmental policy evaluation at different scalesâ€”experience from the Netherlands. Agriculture, Ecosystems and Environment, 2005, 105, 291-306.	5.3	18

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91	Quantifying sustainable intensification of agriculture: The contribution of metrics and modelling. Ecological Indicators, 2021, 129, 107870.	6.3	18
92	Exploring adaptations of groundnut cropping to prevailing climate variability and extremes in Limpopo Province, South Africa. Field Crops Research, 2018, 219, 1-13.	5.1	17
93	Mitigation of Climate Change to Enhance Food Security: An Analytical Framework. Forum for Development Studies, 2012, 39, 51-73.	1.0	16
94	Revisiting food security in 2021: an overview of the past year. Food Security, 2022, 14, 1-7.	5.3	16
95	Robust uncertainty. Nature Climate Change, 2014, 4, 251-252.	18.8	15
96	Nitrogen management in crop rotations after the break-up of grassland: Insights from modelling. Agriculture, Ecosystems and Environment, 2018, 259, 28-44.	5.3	15
97	Sustainable intensification of crop production under alternative future changes in climate and technology: The case of the North Savo region. Agricultural Systems, 2021, 190, 103135.	6.1	15
98	Projections of climate change impacts on crop production: A global and a Nordic perspective. Acta Agriculturae Scandinavica - Section A: Animal Science, 2012, 62, 166-180.	0.2	14
99	What determines a productive winter bean-wheat genotype combination for intercropping in central Germany?. European Journal of Agronomy, 2021, 128, 126294.	4.1	14
100	Uncertainties in Scaling-Up Crop Models for Large-Area Climate Change Impact Assessments. ICP Series on Climate Change Impacts, Adaptation, and Mitigation, 2015, , 261-277.	0.4	11
101	Performance of 13 crop simulation models and their ensemble for simulating four field crops in Central Europe. Journal of Agricultural Science, 2021, 159, 69-89.	1.3	11
102	The AgMIP Coordinated Climate-Crop Modeling Project (C3MP): Methods and Protocols. ICP Series on Climate Change Impacts, Adaptation, and Mitigation, 2015, , 191-220.	0.4	10
103	Modeling the multiâ€functionality of African savanna landscapes under global change. Land Degradation and Development, 2021, 32, 2077-2081.	3.9	10
104	Can intercropping be an adaptation to drought? A modelâ€based analysis for pearl milletâ€"cowpea. Journal of Agronomy and Crop Science, 2022, 208, 910-927.	3.5	10
105	Assessing climate effects on wheat yield and water use in Finland using a super-ensemble-based probabilistic approach. Climate Research, 2015, 65, 23-37.	1.1	9
106	Fertilizer management effects on oil palm yield and nutrient use efficiency on sandy soils with limited water supply in Central Kalimantan. Nutrient Cycling in Agroecosystems, 2018, 112, 317-333.	2.2	8
107	Salinity Constraints for Small-Scale Agriculture and Impact on Adaptation in North Aceh, Indonesia. Agronomy, 2022, 12, 341.	3.0	7
108	Impacts of changes in climate and socio-economic factors on land use in the Rhine basin: projections for the decade 2040-49. Studies in Environmental Science, 1995, 65, 947-950.	0.0	6

#	ARTICLE	IF	CITATIONS
109	Data requirements for crop modellingâ€”Applying the learning curve approach to the simulation of winter wheat flowering time under climate change. European Journal of Agronomy, 2018, 95, 33-44.	4.1	6
110	Cocoa agroforestry is less resilient to suboptimal and extreme climate than cocoa in full sun: Reply to Norgrove (2017). Global Change Biology, 2018, 24, e733-e740.	9.5	6
111	Expected effects of climate change on the production and water use of crop rotation management reproduced by crop model ensemble for Czech Republic sites. European Journal of Agronomy, 2022, 134, 126446.	4.1	6
112	WOFOST developer's response to article by Stella etÂ al., Environmental Modelling & Software 59 (2014): 44â€“58. Environmental Modelling and Software, 2015, 73, 57-59.	4.5	5
113	Disentangling effects of altitude and shade cover on coffee fruit dynamics and vegetative growth in smallholder coffee systems. Agriculture, Ecosystems and Environment, 2022, 326, 107786.	5.3	4
114	Tackling climate risk to sustainably intensify smallholder maize farming systems in southern Africa. Environmental Research Letters, 2022, 17, 075005.	5.2	4
115	A Modelling Framework for Assessing Adaptive Management Options of Finnish Agrifood Systems to Climate Change. Journal of Agricultural Science, 2010, 2, .	0.2	3
116	Statistical Analysis of Large Simulated Yield Datasets for Studying Climate Effects. ICP Series on Climate Change Impacts, Adaptation, and Mitigation, 2015, , 279-295.	0.4	2
117	Impact of Different Methods of Root-Zone Application of Biochar-Based Fertilizers on Young Cocoa Plants: Insights from a Pot-Trial. Horticulturae, 2022, 8, 328.	2.8	2
118	Impact of global warming on European cereal production.. CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources, 0, , 1-15.	1.0	1
119	Biochar-Based Fertilizer Can Enhance Nutrient Availability in Young Cocoa Plants. SSRN Electronic Journal, 0, , .	0.4	0