Claas Nendel

List of Publications by Year
in descending order

135 papers	10,350 citations	53794 45 h-index	36028 97 g-index
144 all docs	144 docs citations	144 times ranked	8667 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	How do various maize crop models vary in their responses to climate change factors?. Global Change Biology, 2014, 20, 2301-2320.	9.5	525
4	Multimodel ensembles of wheat growth: many models are better than one. Global Change Biology, 2015, 21, 911-925.	9.5	387
5	Similar estimates of temperature impacts on global wheat yield by three independent methods. Nature Climate Change, 2016, 6, 1130-1136.	18.8	352
6	Climate change impact and adaptation for wheat protein. Global Change Biology, 2019, 25, 155-173.	9.5	312
7	Intra-annual reflectance composites from Sentinel-2 and Landsat for national-scale crop and land cover mapping. Remote Sensing of Environment, 2019, 220, 135-151.	11.0	307
8	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
9	Crop modelling for integrated assessment of risk to food production from climate change. Environmental Modelling and Software, 2015, 72, 287-303.	4.5	230
10	Diverging importance of drought stress for maize and winter wheat in Europe. Nature Communications, 2018, 9, 4249.	12.8	230
11	The MONICA model: Testing predictability for crop growth, soil moisture and nitrogen dynamics. Ecological Modelling, 2011, 222, 1614-1625.	2.5	175
12	The uncertainty of crop yield projections is reduced by improved temperature response functions. Nature Plants, 2017, 3, 17102.	9.3	170
13	The soybean yield gap in Brazil â€" magnitude, causes and possible solutions for sustainable production. Journal of Agricultural Science, 2015, 153, 1394-1411.	1.3	149
14	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
15	Decline in climate resilience of European wheat. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 123-128.	7.1	144
16	Crop rotation modellingâ€"A European model intercomparison. European Journal of Agronomy, 2015, 70, 98-111.	4.1	125
17	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
18	Predicting Maize Phenology: Intercomparison of Functions for Developmental Response to Temperature. Agronomy Journal, 2014, 106, 2087-2097.	1.8	112

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19	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
20	Multimodel ensembles improve predictions of cropâ€"environmentâ€"management interactions. Global Change Biology, 2018, 24, 5072-5083.	9.5	111
21	Agricultural land use changes â€" a scenario-based sustainability impact assessment for Brandenburg, Germany. Ecological Indicators, 2015, 48, 505-517.	6.3	110
22	Landâ€use change and land degradation on the Mongolian Plateau from 1975 to 2015â€"A case study from Xilingol, China. Land Degradation and Development, 2018, 29, 1595-1606.	3.9	107
23	Global wheat production with 1.5 and 2.0Â°C above preâ€industrial warming. Global Change Biology, 2019, 25, 1428-1444.	9.5	107
24	Sensitivity of European wheat to extreme weather. Field Crops Research, 2018, 222, 209-217.	5.1	101
25	Gradients of microclimate, carbon and nitrogen in transition zones of fragmented landscapes â€" a review. Agricultural and Forest Meteorology, 2017, 232, 659-671.	4.8	95
26	Mapping of crop types and crop sequences with combined time series of Sentinel-1, Sentinel-2 and Landsat 8 data for Germany. Remote Sensing of Environment, 2022, 269, 112831.	11.0	95
27	A potato model intercomparison across varying climates and productivity levels. Global Change Biology, 2017, 23, 1258-1281.	9.5	90
28	Designing future barley ideotypes using a crop model ensemble. European Journal of Agronomy, 2017, 82, 144-162.	4.1	84
29	Towards national-scale characterization of grassland use intensity from integrated Sentinel-2 and Landsat time series. Remote Sensing of Environment, 2020, 238, 111124.	11.0	83
30	Impact of Spatial Soil and Climate Input Data Aggregation on Regional Yield Simulations. PLoS ONE, 2016, 11, e0151782.	2.5	78
31	Grapevine bud break prediction for cool winter climates. International Journal of Biometeorology, 2010, 54, 231-241.	3.0	73
32	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
33	Do greenhouse gas emission calculations from energy crop cultivation reflect actual agricultural management practices? â€" A review of carbon footprint calculators. Renewable and Sustainable Energy Reviews, 2017, 67, 461-476.	16.4	69
34	Adaptation response surfaces for managing wheat under perturbed climate and CO2 in a Mediterranean environment. Agricultural Systems, 2018, 159, 260-274.	6.1	68
35	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
36	Testing farm management options as climate change adaptation strategies using the MONICA model. European Journal of Agronomy, 2014, 52, 47-56.	4.1	67

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37	Identifying drivers of land degradation in Xilingol, China, between 1975 and 2015. Land Use Policy, 2019, 83, 543-559.	5.6	67
38	Site-specific impacts of climate change on wheat production across regions of Germany using different CO2 response functions. European Journal of Agronomy, 2014, 52, 22-32.	4.1	64
39	Simulation of maize evapotranspiration: An inter-comparison among 29 maize models. Agricultural and Forest Meteorology, 2019, 271, 264-284.	4.8	62
40	Modelling climate change impacts on maize yields under low nitrogen input conditions in subâ€Saharan Africa. Global Change Biology, 2020, 26, 5942-5964.	9.5	60
41	LandCaRe DSS â€" An interactive decision support system for climate change impact assessment and the analysis of potential agricultural land use adaptation strategies. Journal of Environmental Management, 2013, 127, S168-S183.	7.8	57
42	No perfect storm for crop yield failure in Germany. Environmental Research Letters, 2020, 15, 104012.	5.2	53
43	Key challenges and priorities for modelling European grasslands under climate change. Science of the Total Environment, 2016, 566-567, 851-864.	8.0	52
44	Ensemble modelling, uncertainty and robust predictions of organic carbon in longâ€term bareâ€fallow soils. Global Change Biology, 2021, 27, 904-928.	9.5	52
45	Multi-wheat-model ensemble responses to interannual climate variability. Environmental Modelling and Software, 2016, 81, 86-101.	4.5	50
46	Mapping grassland mowing events across Germany based on combined Sentinel-2 and Landsat 8 time series. Remote Sensing of Environment, 2022, 269, 112795.	11.0	49
47	Uncertainty of wheat water use: Simulated patterns and sensitivity to temperature and CO2. Field Crops Research, 2016, 198, 80-92.	5.1	47
48	Classifying multi-model wheat yield impact response surfaces showing sensitivity to temperature and precipitation change. Agricultural Systems, 2018, 159, 209-224.	6.1	47
49	A simple model approach to simulate nitrogen dynamics in vineyard soils. Ecological Modelling, 2004, 177, 1-15.	2.5	46
50	Tracking nitrogen losses in a greenhouse crop rotation experiment in North China using the EU-Rotate_N simulation model. Environmental Pollution, 2010, 158, 2218-2229.	7.5	46
51	Performance of process-based models for simulation of grain N in crop rotations across Europe. Agricultural Systems, 2017, 154, 63-77.	6.1	43
52	Approaches to model the impact of tillage implements on soil physical and nutrient properties in different agro-ecosystem models. Soil and Tillage Research, 2018, 180, 210-221.	5.6	43
53	Future yields of double-cropping systems in the Southern Amazon, Brazil, under climate change and technological development. Agricultural Systems, 2020, 177, 102707.	6.1	43
54	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

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55	Machine learning in crop yield modelling: A powerful tool, but no surrogate for science. Agricultural and Forest Meteorology, 2022, 312, 108698.	4.8	43
56	Evaluation of Best Management Practices for N fertilisation in regional field vegetable production with a small-scale simulation model. European Journal of Agronomy, 2009, 30, 110-118.	4.1	40
57	Assessment of crop-management strategies to improve soybean resilience to climate change in Southern Brazil. Crop and Pasture Science, 2018, 69, 154.	1.5	40
58	Estimating the contribution of crop residues to soil organic carbon conservation. Environmental Research Letters, 2019, 14, 094008.	5.2	40
59	Variability of effects of spatial climate data aggregation on regional yield simulation by crop models. Climate Research, 2015, 65, 53-69.	1.1	39
60	Soil Organic Carbon and Nitrogen Feedbacks on Crop Yields under Climate Change. Agricultural and Environmental Letters, 2018, 3, 180026.	1.2	36
61	Analysing the parameter sensitivity of the agro-ecosystem model MONICA for different crops. European Journal of Agronomy, 2015, 71, 73-87.	4.1	35
62	Spatial sampling of weather data for regional crop yield simulations. Agricultural and Forest Meteorology, 2016, 220, 101-115.	4.8	35
63	Multi-model uncertainty analysis in predicting grain N for crop rotations in Europe. European Journal of Agronomy, 2017, 84, 152-165.	4.1	35
64	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
65	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
66	Simulating regional winter wheat yields using input data of different spatial resolution. Field Crops Research, 2013, 145, 67-77.	5.1	33
67	Improving the accounting of field emissions in the carbon footprint of agricultural products: a comparison of default IPCC methods with readily available medium-effort modeling approaches. International Journal of Life Cycle Assessment, 2016, 21, 791-805.	4.7	33
68	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
69	The performance of the EU-Rotate_N model in predicting the growth and nitrogen uptake of rotations of field vegetable crops in a Mediterranean environment. Journal of Agricultural Science, 2013, 151, 538-555.	1.3	29
70	â€œSlash and burnâ€•or â€œweed and manureâ€? A modelling approach to explore hypotheses of late Neolithic crop cultivation in pre-alpine wetland sites. Vegetation History and Archaeobotany, 2016, 25, 611-627.	2.1	29
71	Analysis of options for increasing wheat (Triticum aestivum L.) yield in south-eastern Australia: The role of irrigation, cultivar choice and time of sowing. Agricultural Water Management, 2016, 166, 139-148.	5.6	29
72	Using Shapley additive explanations to interpret extreme gradient boosting predictions of grassland degradation in Xilingol, China. Geoscientific Model Development, 2021, 14, 1493-1510.	3.6	29

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73	Mapping Crop Types and Cropping Systems in Nigeria with Sentinel-2 Imagery. Remote Sensing, 2021, 13, 3523.	4.0	29
74	The implication of input data aggregation on up-scaling soil organic carbon changes. Environmental Modelling and Software, 2017, 96, 361-377.	4.5	28
75	Impact analysis of climate data aggregation at different spatial scales on simulated net primary productivity for croplands. European Journal of Agronomy, 2017, 88, 41-52.	4.1	27
76	Detection and Quantification of Irrigation Water Amounts at 500 m Using Sentinel-1 Surface Soil Moisture. Remote Sensing, 2021, 13, 1727.	4.0	27
77	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
78	Sweet corn significantly increases nitrogen retention and reduces nitrogen leaching as summer catch crop in protected vegetable production systems. Soil and Tillage Research, 2018, 180, 148-153.	5.6	25
79	The response of process-based agro-ecosystem models to within-field variability in site conditions. Field Crops Research, 2018, 228, 1-19.	5.1	25
80	The nitrogen nutrition potential of arable soils. Scientific Reports, 2019, 9, 5851.	3.3	25
81	Are soybean models ready for climate change food impact assessments?. European Journal of Agronomy, 2022, 135, 126482.	4.1	25
82	YIELDSTAT â€“ A spatial yield model for agricultural crops. European Journal of Agronomy, 2014, 52, 33-46.	4.1	24
83	Gauging the sources of uncertainty in soybean yield simulations using the MONICA model. Agricultural Systems, 2017, 155, 9-18.	6.1	23
84	Priority for climate adaptation measures in European crop production systems. European Journal of Agronomy, 2022, 138, 126516.	4.1	23
85	Management and spatial resolution effects on yield and water balance at regional scale in crop models. Agricultural and Forest Meteorology, 2019, 275, 184-195.	4.8	22
86	Microclimate and matter dynamics in transition zones of forest to arable land. Agricultural and Forest Meteorology, 2019, 268, 1-10.	4.8	21
87	Sustainable intensification of crop residue exploitation for bioenergy: Opportunities and challenges. GCB Bioenergy, 2020, 12, 71-89.	5.6	20
88	Nitrogen mineralization from mature bio-waste compost in vineyard soils. I. Long-term laboratory incubation experiments. Journal of Plant Nutrition and Soil Science, 2004, 167, 397-407.	1.9	19
89	Testing different CO₂ response algorithms against a FACE crop rotation experiment. Njas - Wageningen Journal of Life Sciences, 2009, 57, 17-25.	7.7	18
90	Considering cost accountancy items in crop production simulations under climate change. European Journal of Agronomy, 2014, 52, 57-68.	4.1	18

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91	Net ecosystem fluxes and composition of biogenic volatile organic compounds over a maize fieldâ€“interaction of meteorology and phenological stages. GCB Bioenergy, 2017, 9, 1627-1643.	5.6	18
92	Modeling Yields Response to Shading in the Field-to-Forest Transition Zones in Heterogeneous Landscapes. Agriculture (Switzerland), 2019, 9, 6.	3.1	18
93	Quantifying sustainable intensification of agriculture: The contribution of metrics and modelling. Ecological Indicators, 2021, 129, 107870.	6.3	18
94	Crop growth and soil water fluxes at erosionâ€affected arable sites: Using weighing lysimeter data for model intercomparison. Vadose Zone Journal, 2020, 19, e20058.	2.2	17
95	The biophysical and socio-economic dimension of yield gaps in the southern Amazon â€“ A bio-economic modelling approach. Agricultural Systems, 2018, 165, 1-13.	6.1	16
96	Effects of input data aggregation on simulated crop yields in temperate and Mediterranean climates. European Journal of Agronomy, 2019, 103, 32-46.	4.1	16
97	Modelling Agroforestryâ€™s Contributions to Peopleâ€"A Review of Available Models. Agronomy, 2021, 11, 2106.	3.0	16
98	Soil Biology and Nitrogen Dynamics Of Vineyard Soils As Affected by a Mature Biowaste Compost Application. Compost Science and Utilization, 2007, 15, 70-77.	1.2	15
99	Experiences of inter- and transdisciplinary research â€“ a trajectory of knowledge integration within a large research consortium. Erdkunde, 2017, 71, 177-193.	0.8	15
100	Probabilistic modeling of crop-yield loss risk under drought: a spatial showcase for sub-Saharan Africa. Environmental Research Letters, 2022, 17, 024028.	5.2	14
101	The MiLA tool: Modeling greenhouse gas emissions and cumulative energy demand of energy crop cultivation in rotation. Agricultural Systems, 2017, 152, 67-79.	6.1	12
102	Biotic Yield Losses in the Southern Amazon, Brazil: Making Use of Smartphone-Assisted Plant Disease Diagnosis Data. Frontiers in Plant Science, 2021, 12, 621168.	3.6	12
103	CROP MODELS AS RESEARCH AND INTERPRETATIVE TOOLS. Sel'skokhozyaistvennaya Biologiya, 2017, 52, 437-445.	0.3	12
104	Nitrogen mineralization from mature bio-waste compost in vineyard soils II. Test of N-mineralization parameters in a long-termin situ incubation experiment. Journal of Plant Nutrition and Soil Science, 2005, 168, 219-227.	1.9	11
105	Kinetics of net nitrogen mineralisation from soil-applied grape residues. Nutrient Cycling in Agroecosystems, 2007, 79, 233-241.	2.2	11
106	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
107	Converting simulated total dry matter to fresh marketable yield for field vegetables at a range of nitrogen supply levels. Plant and Soil, 2009, 325, 319-334.	3.7	10
108	Temporal Sensitivity Analysis of the MONICA Model: Application of Two Global Approaches to Analyze the Dynamics of Parameter Sensitivity. Agriculture (Switzerland), 2019, 9, 37.	3.1	10

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109	Simulation of winter wheat response to variable sowing dates and densities in a high-yielding environment. Journal of Experimental Botany, 2022, 73, 5715-5729.	4.8	10
110	Seeing the forest not for the carbon: why concentrating on land-use-induced carbon stock changes of soils in Brazil can be climate-unfriendly. Regional Environmental Change, 2018, 18, 63-75.	2.9	9
111	A model-based assessment of the environmental impact of land-use change across scales in Southern Amazonia. Regional Environmental Change, 2018, 18, 161-173.	2.9	9
112	Carbon-optimised land management strategies for southern Amazonia. Regional Environmental Change, 2018, 18, 1-9.	2.9	9
113	Agricultural Landscapes in Brandenburg, Germany: An Analysis of Characteristics and Spatial Patterns. International Journal of Environmental Research, 2021, 15, 487-507.	2.3	9
114	MONICA: A Simulation Model for Nitrogen and Carbon Dynamics in Agro-Ecosystems. Environmental Science and Engineering, 2014, , 389-405.	0.2	9
115	Uncertainty in climate change impact studies for irrigated maize cropping systems in southern Spain. Scientific Reports, 2022, 12, 4049.	3.3	9
116	Nitrogen mineralization from mature bioâ€waste compost in vineyard soils. III Simulation of soil mineralâ€nitrogen dynamics. Journal of Plant Nutrition and Soil Science, 2007, 170, 598-607.	1.9	8
117	Dynamic fuzzy models in agroecosystem modeling. Environmental Modelling and Software, 2013, 46, 44-49.	4.5	8
118	A Spatial Model-Based Decision Support System for Evaluating Agricultural Landscapes Under the Aspect of Climate Change. Springer Water, 2016, , 519-540.	0.3	8
119	Growth and yield response of faba bean to soil moisture regimes and sowing dates: Field experiment and modelling study. Agricultural Water Management, 2019, 213, 1063-1077.	5.6	8
120	Reproducing CO2 exchange rates of a crop rotation at contrasting terrain positions using two different modelling approaches. Soil and Tillage Research, 2016, 156, 219-229.	5.6	7
121	Reply to Snowdon et al. and Piepho: Genetic response diversity to provide yield stability of cultivar groups deserves attention. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 10627-10629.	7.1	7
122	Transition zones across agricultural field boundaries for integrated landscape research and management of biodiversity and yields. Ecological Solutions and Evidence, 2022, 3, .	2.0	7
123	Yield Response of an Ensemble of Potato Crop Models to Elevated CO2 in Continental Europe. European Journal of Agronomy, 2021, 126, 126265.	4.1	6
124	Methodology to assess the changing risk of yield failure due to heat and drought stress under climate change. Environmental Research Letters, 2021, 16, 104033.	5.2	6
125	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
126	Effects of temperature on the movement and feeding behaviour of the large lupine beetle, Sitona gressorius. Journal of Pest Science, 2023, 96, 389-402.	3.7	6

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127	How reliable are current crop models for simulating growth and seed yield of canola across global sites and under future climate change?. Climatic Change, 2022, 172, .	3.6	5
128	Same soil, different climate: Crop model intercomparison on translocated lysimeters. Vadose Zone Journal, 2022, 21, .	2.2	4
129	Simulating Temperature Impacts on Crop Production Using MONICA. Springer Water, 2016, , 503-518.	0.3	3
130	Testing and Application of the AquaCrop Model for Wheat Production Under Different Field Management Conditions in South-Eastern Australia. Agricultural Research, 2020, 9, 379-391.	1.7	3
131	Estimating the Evaporative Cooling Effect of Irrigation within and above Soybean Canopy. Water (Switzerland), 2022, 14, 319.	2.7	3
132	Modeling Intraâ€•and Interannual Variability of BVOC Emissions From Maize, Oilâ€Seed Rape, and Ryegrass. Journal of Advances in Modeling Earth Systems, 2022, 14, .	3.8	2
133	Data on and methodology for measurements of microclimate and matter dynamics in transition zones between forest and adjacent arable land. One Ecosystem, 0, 3, e24295.	0.0	1
134	Improving the simulation of permanent grasslands across Germany by using multi-objective uncertainty-based calibration of plant-water dynamics. European Journal of Agronomy, 2022, 134, 126464.	4.1	1
135	DATABASE OF NITROGEN FERTILISATION EXPERIMENTS WITH FIELD VEGETABLES. Acta Horticulturae, 2006, , 229-232.	0.2	0