Mikhail A Semenov

List of Publications by Year
in descending order

123 papers	15,215 citations	22099 59 h-index	19690 117 g-index
129 all docs	129 docs citations	129 times ranked	11602 citing authors

#	Article	IF	Citations
1	Rising temperatures reduce global wheatÂproduction. Nature Climate Change, 2015, 5, 143-147.	8.1	1,544
2	Uncertainty in simulating wheat yields under climate change. Nature Climate Change, 2013, 3, 827-832.	8.1	1,021
3	Crop responses to climatic variation. Philosophical Transactions of the Royal Society B: Biological Sciences, 2005, 360, 2021-2035.	1.8	764
4	USE OF A STOCHASTIC WEATHER GENERATOR IN THE DEVELOPMENT OF CLIMATE CHANGE SCENARIOS. , 1997, 35, 397-414.		614
5	Comparison of the WGEN and LARS-WG stochastic weather generators for diverse climates. Climate Research, 1998, 10, 95-107.	0.4	484
6	Adverse weather conditions for European wheat production will become more frequent with climate change. Nature Climate Change, 2014, 4, 637-643.	8.1	452
7	Use of multi-model ensembles from global climate models for assessment of climate change impacts. Climate Research, 2010, 41, 1-14.	0.4	430
8	A serial approach to local stochastic weather models. Ecological Modelling, 1991, 57, 27-41.	1.2	387
9	Multimodel ensembles of wheat growth: many models are better than one. Global Change Biology, 2015, 21, 911-925.	4.2	387
10	Similar estimates of temperature impacts on global wheat yield by three independent methods. Nature Climate Change, 2016, 6, 1130-1136.	8.1	352
11	Climate change impact and adaptation for wheat protein. Global Change Biology, 2019, 25, 155-173.	4.2	312
12	Sirius: a mechanistic model of wheat response to environmental variation. European Journal of Agronomy, 1998, 8, 161-179.	1.9	289
13	Modelling predicts that heat stress, not drought, will increase vulnerability of wheat in Europe. Scientific Reports, 2011, 1, 66.	1.6	269
14	Climate Change Affects Winter Chill for Temperate Fruit and Nut Trees. PLoS ONE, 2011, 6, e20155.	1.1	267
15	Crop modelling for integrated assessment of risk to food production from climate change. Environmental Modelling and Software, 2015, 72, 287-303.	1.9	230
16	Diverging importance of drought stress for maize and winter wheat in Europe. Nature Communications, 2018, 9, 4249.	5.8	230
17	Climatic variability and the modelling of crop yields. Agricultural and Forest Meteorology, 1995, 73, 265-283.	1.9	224
18	Climate Change and Future Pollen Allergy in Europe. Environmental Health Perspectives, 2017, 125, 385-391.	2.8	216

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19	Adapting wheat in Europe for climate change. Journal of Cereal Science, 2014, 59, 245-256.	1.8	195
20	Modelling nitrogen uptake and redistribution in wheat. Field Crops Research, 2000, 68, 21-29.	2.3	180
21	Range and severity of a plant disease increased by global warming. Journal of the Royal Society Interface, 2008, 5, 525-531.	1.5	179
22	Simulation of extreme weather events by a stochastic weather generator. Climate Research, 2008, 35, 203-212.	0.4	177
23	Modelling protein content and composition in relation to crop nitrogen dynamics for wheat. European Journal of Agronomy, 2006, 25, 138-154.	1.9	173
24	The uncertainty of crop yield projections is reduced by improved temperature response functions. Nature Plants, 2017, 3, 17102.	4.7	170
25	Development of high-resolution UKCIP02-based climate change scenarios in the UK. Agricultural and Forest Meteorology, 2007, 144, 127-138.	1.9	165
26	Effects of elevated CO2 and drought on wheat: testing crop simulation models for different experimental and climatic conditions. Agriculture, Ecosystems and Environment, 2002, 93, 249-266.	2.5	159
27	Contribution of crop model structure, parameters and climate projections to uncertainty in climate change impact assessments. Global Change Biology, 2018, 24, 1291-1307.	4.2	149
28	Identifying target traits and molecular mechanisms for wheat breeding under a changing climate. Journal of Experimental Botany, 2009, 60, 2791-2804.	2.4	148
29	Effects of climate change and seed dispersal on airborne ragweed pollen loads in Europe. Nature Climate Change, 2015, 5, 766-771.	8.1	147
30	Heat tolerance around flowering in wheat identified as a key trait for increased yield potential in Europe under climate change. Journal of Experimental Botany, 2015, 66, 3599-3609.	2.4	142
31	Spatial interpolation of the LARS-WG stochastic weather generator in Great Britain. Climate Research, 1999, 11, 137-148.	0.4	135
32	Modelling impacts of climate change on wheat yields in England and Wales: assessing drought risks. Agricultural Systems, 2005, 84, 77-97.	3.2	129
33	Drought tolerance during reproductive development is important for increasing wheat yield potential under climate change in Europe. Journal of Experimental Botany, 2019, 70, 2549-2560.	2.4	127
34	Impacts of climate change on wheat in England and Wales. Journal of the Royal Society Interface, 2009, 6, 343-350.	1.5	125
35	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.	0.4	122
36	Impacts of climate change on wheat anthesis and fusarium ear blight in the UK. European Journal of Plant Pathology, 2011, 130, 117-131.	0.8	121

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37	Comparison of wheat simulation models under climate change. I. Model calibration and sensitivity analyses. Climate Research, 1996, 7, 253-270.	0.4	113
38	Multimodel ensembles improve predictions of cropâ€“environmentâ€“management interactions. Global Change Biology, 2018, 24, 5072-5083.	4.2	111
39	Crop model improvement reduces the uncertainty of the response to temperature of multi-model ensembles. Field Crops Research, 2017, 202, 5-20.	2.3	109
40	Global wheat production with 1.5 and 2.0Â°C above preâ€industrial warming. Global Change Biology, 2019, 25, 1428-1444.	4.2	107
41	Warming-induced shift in European mushroom fruiting phenology. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 14488-14493.	3.3	104
42	Mitigation efforts will not fully alleviate the increase in water scarcity occurrence probability in wheat-producing areas. Science Advances, 2019, 5, eaau2406.	4.7	104
43	A Process-Based Approach to Predicting the Effect of Climate Change on the Distribution of an Invasive Allergenic Plant in Europe. PLoS ONE, 2014, 9, e88156.	1.1	99
44	Making sense of wheat development: a critique of methodology. Field Crops Research, 1998, 55, 117-127.	2.3	96
45	Modelling CO2 effects on wheat with varying nitrogen supplies. Agriculture, Ecosystems and Environment, 2000, 82, 27-37.	2.5	96
46	Maize yields over Europe may increase in spite of climate change, with an appropriate use of the genetic variability of flowering time. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 10642-10647.	3.3	94
47	Canopy temperature for simulation of heat stress in irrigated wheat in a semi-arid environment: A multi-model comparison. Field Crops Research, 2017, 202, 21-35.	2.3	91
48	Designing future barley ideotypes using a crop model ensemble. European Journal of Agronomy, 2017, 82, 144-162.	1.9	84
49	Climate change and spring-fruiting fungi. Proceedings of the Royal Society B: Biological Sciences, 2010, 277, 1169-1177.	1.2	81
50	Assessing uncertainties in impact of climate change on grass production in Northern Europe using ensembles of global climate models. Agricultural and Forest Meteorology, 2013, 170, 103-113.	1.9	77
51	Northâ€“South divide: contrasting impacts of climate change on crop yields in Scotland and England. Journal of the Royal Society Interface, 2010, 7, 123-130.	1.5	75
52	A wheat canopy model linking leaf area and phenology. European Journal of Agronomy, 2005, 22, 19-32.	1.9	74
53	Deconvoluting nitrogen use efficiency in wheat: A simulation study. European Journal of Agronomy, 2007, 26, 283-294.	1.9	72
54	Adverse weather conditions for UK wheat production under climate change. Agricultural and Forest Meteorology, 2020, 282-283, 107862.	1.9	71

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55	Adaptation options for wheat in Europe will be limited by increased adverse weather events under climate change. Journal of the Royal Society Interface, 2015, 12, 20150721.	1.5	69
56	Adaptation response surfaces for managing wheat under perturbed climate and CO2 in a Mediterranean environment. Agricultural Systems, 2018, 159, 260-274.	3.2	68
57	Designing highâ€yielding wheat ideotypes for a changing climate. Food and Energy Security, 2013, 2, 185-196.	2.0	65
58	Adapting wheat ideotypes for climate change: accounting for uncertainties in CMIP5 climate projections. Climate Research, 2015, 65, 123-139.	0.4	65
59	Climate variability and crop yields in Europe. Nature, 1999, 400, 724-724.	13.7	64
60	Assessing lead-time for predicting wheat growth using a crop simulation model. Agricultural and Forest Meteorology, 2005, 135, 302-313.	1.9	61
61	Utility of dynamical seasonal forecasts in predicting crop yield. Climate Research, 2007, 34, 71-81.	0.4	60
62	Simplifying Sirius: sensitivity analysis and development of a meta-model for wheat yield prediction. European Journal of Agronomy, 2001, 14, 43-60.	1.9	59
63	The impact of climate change on sugarbeet yield in the UK: 1976â€"2004. Journal of Agricultural Science, 2007, 145, 367-375.	0.6	59
64	Comparison of wheat simulation models under climate change. II. Application of climate change scenarios. Climate Research, 1996, 7, 271-281.	0.4	59
65	Reconciling alternative models of phenological development in winter wheat. Field Crops Research, 2007, 103, 36-41.	2.3	58
66	Large genetic yield potential and genetic yield gap estimated for wheat in Europe. Global Food Security, 2020, 24, 100340.	4.0	57
67	Quantifying effects of simple wheat traits on yield in water-limited environments using a modelling approach. Agricultural and Forest Meteorology, 2009, 149, 1095-1104.	1.9	56
68	Simulation of environmental and genotypic variations of final leaf number and anthesis date for wheat. European Journal of Agronomy, 2012, 42, 22-33.	1.9	56
69	Climate forcing of an emerging pathogenic fungus across a montane multi-host community. Philosophical Transactions of the Royal Society B: Biological Sciences, 2016, 371, 20150454.	1.8	52
70	<i>In silico</i>system analysis of physiological traits determining grain yield and protein concentration for wheat as influenced by climate and crop management. Journal of Experimental Botany, 2015, 66, 3581-3598.	2.4	51
71	ELPIS: a dataset of local-scale daily climate scenarios for Europe. Climate Research, 2010, 44, 3-15.	0.4	51
72	Multi-wheat-model ensemble responses to interannual climate variability. Environmental Modelling and Software, 2016, 81, 86-101.	1.9	50

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73	Uncertainty of wheat water use: Simulated patterns and sensitivity to temperature and CO2. Field Crops Research, 2016, 198, 80-92.	2.3	47
74	Classifying multi-model wheat yield impact response surfaces showing sensitivity to temperature and precipitation change. Agricultural Systems, 2018, 159, 209-224.	3.2	47
75	A processâ€based approach to modelling impacts of climate change on the damage niche of an agricultural weed. Global Change Biology, 2012, 18, 2071-2080.	4.2	45
76	Raising genetic yield potential in high productive countries: Designing wheat ideotypes under climate change. Agricultural and Forest Meteorology, 2019, 271, 33-45.	1.9	44
77	Use of an individual-based model to forecast the effect of climate change on the dynamics, abundance and geographical range of the pest slug Deroceras reticulatum in the UK. Global Change Biology, 2006, 12, 1643-1657.	4.2	43
78	Analysis of Convergence of an Evolutionary Algorithm with Self-Adaptation using a Stochastic Lyapunov function. Evolutionary Computation, 2003, 11, 363-379.	2.3	41
79	Risk factors for European winter oilseed rape production under climate change. Agricultural and Forest Meteorology, 2019, 272-273, 30-39.	1.9	41
80	Climate change scenarios with high spatial and temporal resolution for agricultural applications. Forestry, 1995, 68, 349-360.	1.2	40
81	Climatic change and the growth and development of wheat in the UK and France. European Journal of Agronomy, 1993, 2, 293-304.	1.9	38
82	Future change of daily precipitation indices in Japan: A stochastic weather generatorâ€based bootstrap approach to provide probabilistic climate information. Journal of Geophysical Research, 2012, 117, .	3.3	38
83	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.	3.2	36
84	Physical robustness of canopy temperature models for crop heat stress simulation across environments and production conditions. Field Crops Research, 2018, 216, 75-88.	2.3	36
85	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.	1.9	35
86	Transient responses to increasing CO2 and climate change in an unfertilized grassâ€“clover sward. Climate Research, 2010, 41, 221-232.	0.4	35
87	Temperature, CO2 and the growth and development of wheat: Changes in the mean and variability of growing conditions. Climatic Change, 1996, 33, 351-368.	1.7	34
88	An Individual-Based Model of the Evolution of Pesticide Resistance in Heterogeneous Environments: Control of Meligethes aeneus Population in Oilseed Rape Crops. PLoS ONE, 2014, 9, e115631.	1.1	34
89	The impact of climate change on disease constraints on production of oilseed rape. Food Security, 2010, 2, 143-156.	2.4	33
90	Effect of using different methods in the construction of climate change scenarios: examples from Europe. Climate Research, 1996, 7, 195-211.	0.4	33

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91	Adaptation to increasing severity of phoma stem canker on winter oilseed rape in the UK under climate change. Journal of Agricultural Science, 2010, 148, 683-694.	0.6	32
92	Modelling Deroceras reticulatum (Gastropoda) population dynamics based on daily temperature and rainfall. Agriculture, Ecosystems and Environment, 2004, 103, 519-525.	2.5	30
93	Temporally and Genetically Discrete Periods of Wheat Sensitivity to High Temperature. Frontiers in Plant Science, 2017, 8, 51.	1.7	30
94	Comments on â€œTesting winter wheat simulation models predictions against observed UK grain yieldsâ€• by Landau et al. (1998). Agricultural and Forest Meteorology, 1999, 96, 157-161.	1.9	29
95	Modelling the variability of UK sugar beet yields under climate change and husbandry adaptations. Soil Use and Management, 2006, 22, 39-47.	2.6	29
96	Quantifying the effect of uncertainty in soil moisture characteristics on plant growth using a crop simulation model. Field Crops Research, 2008, 106, 138-147.	2.3	29
97	Comparing climate change impacts on cereals based on CMIP3 and EU-ENSEMBLES climate scenarios. Agricultural and Forest Meteorology, 2014, 195-196, 12-23.	1.9	29
98	Global wheat production could benefit from closing the genetic yield gap. Nature Food, 2022, 3, 532-541.	6.2	29
99	ELPIS-JP: a dataset of local-scale daily climate change scenarios for Japan. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 1121-1139.	1.6	28
100	Investigating the effects of inter-annual weather variation (1968â€“2016) on the functional response of cereal grain yield to applied nitrogen, using data from the Rothamsted Long-Term Experiments. Agricultural and Forest Meteorology, 2020, 284, 107898.	1.9	28
101	Shortcomings in wheat yield predictions. Nature Climate Change, 2012, 2, 380-382.	8.1	25
102	Assessing yield gap in high productive countries by designing wheat ideotypes. Scientific Reports, 2019, 9, 5516.	1.6	24
103	Individual based model of slug population and spatial dynamics. Ecological Modelling, 2006, 190, 336-350.	1.2	23
104	Stability of farm income: The role of agricultural diversity and agri-environment scheme payments. Agricultural Systems, 2021, 187, 103009.	3.2	23
105	Understanding effects of genotype Ã— environment Ã— sowing window interactions for durum wheat in the Mediterranean basin. Field Crops Research, 2020, 259, 107969.	2.3	18
106	The potential for soybean to diversify the production of plant-based protein in the UK. Science of the Total Environment, 2021, 767, 144903.	3.9	17
107	Non-Linearity in Climate Change Impact Assessments. Journal of Biogeography, 1995, 22, 597.	1.4	16
108	Vulnerability of European wheat to extreme heat and drought around flowering under future climate. Environmental Research Letters, 2021, 16, 024052.	2.2	16

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109	Use of an individual-based simulation model to explore and evaluate potential insecticide resistance management strategies. Pest Management Science, 2017, 73, 1364-1372.	1.7	14
110	Dynamic simulation of management events for assessing impacts of climate change on pre-alpine grassland productivity. European Journal of Agronomy, 2021, 128, 126306.	1.9	14
111	Local-scale climate scenarios for impact studies and risk assessments: integration of early 21st century ENSEMBLES projections into the ELPIS database. Theoretical and Applied Climatology, 2013, 113, 445-455.	1.3	13
112	Calibration of a crop simulation model using an evolutionary algorithm with self-adaptation. Procedia, Social and Behavioral Sciences, 2010, 2, 7749-7750.	0.5	10
113	Local impacts of climate change on winter wheat in Great Britain. Royal Society Open Science, 2021, 8, 201669.	1.1	9
114	Global Sensitivity Analysis of the Process-Based Wheat Simulation Model SiriusQuality1 Identifies Key Genotypic Parameters and Unravels Parameters Interactions. Procedia, Social and Behavioral Sciences, 2010, 2, 7676-7677.	0.5	7
115	Methodology to assess the changing risk of yield failure due to heat and drought stress under climate change. Environmental Research Letters, 2021, 16, 104033.	2.2	6
116	Changes in agricultural climate in South-Eastern England from 1892 to 2016 and differences in cereal and permanent grassland yield. Agricultural and Forest Meteorology, 2021, 308-309, 108560.	1.9	6
117	Effectiveness of using representative subsets of global climate models in future crop yield projections. Scientific Reports, 2021, 11, 20565.	1.6	5
118	Modelling predicts that heat stress and not drought will limit wheat yield in Europe. Nature Precedings, 0, , .	0.1	4
119	Comment on Lobell et al "Climate Trends and Global Crop Production Since 1980". Nature Precedings, 2011, , .	0.1	4
120	Reply to Gange et al.: Climate-driven changes in the fungal fruiting season in the United Kingdom. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E335.	3.3	4
121	The impact of weather and increased atmospheric CO 2 from 1892 to 2016 on simulated yields of UK wheat. Journal of the Royal Society Interface, 2021, 18, 20210250.	1.5	2
122	Preface: Remote sensing, modelling-based hazard and risk assessment, and management of agro-forested ecosystems. Natural Hazards and Earth System Sciences, 2021, 21, 3873-3877.	1.5	2
123	Application of evolutionary algorithms for model calibration. , 2012, , .		0