Gordan B Bonan

List of Publications by Year
in descending order

112 papers	34,759 citations	28736 57 h-index	64407 83 g-index
125 all docs	125 docs citations	125 times ranked	38650 citing authors

#	Article	IF	Citations
1	Global Consequences of Land Use. Science, 2005, 309, 570-574.	6.0	9,451
2	Forests and Climate Change: Forcings, Feedbacks, and the Climate Benefits of Forests. Science, 2008, 320, 1444-1449.	6.0	4,344
3	The Community Climate System Model Version 3 (CCSM3). Journal of Climate, 2006, 19, 2122-2143.	1.2	2,075
4	Terrestrial Gross Carbon Dioxide Uptake: Global Distribution and Covariation with Climate. Science, 2010, 329, 834-838.	6.0	2,056
5	Recent decline in the global land evapotranspiration trend due to limited moisture supply. Nature, 2010, 467, 951-954.	13.7	1,771
6	The Importance of Land-Cover Change in Simulating Future Climates. Science, 2005, 310, 1674-1678.	6.0	930
7	The Community Land Model Version 5: Description of New Features, Benchmarking, and Impact of Forcing Uncertainty. Journal of Advances in Modeling Earth Systems, 2019, 11, 4245-4287.	1.3	692
8	Parameterization improvements and functional and structural advances in Version 4 of the Community Land Model. Journal of Advances in Modeling Earth Systems, 2011, 3, .	1.3	666
9	Improvements to the Community Land Model and their impact on the hydrological cycle. Journal of Geophysical Research, 2008, 113, .	3.3	649
10	The Land Surface Climatology of the Community Land Model Coupled to the NCAR Community Climate Model*. Journal of Climate, 2002, 15, 3123-3149.	1.2	583
11	Carbonâ€“Concentration and Carbonâ€“Climate Feedbacks in CMIP5 Earth System Models. Journal of Climate, 2013, 26, 5289-5314.	1.2	576
12	Improving canopy processes in the Community Land Model version 4 (CLM4) using global flux fields empirically inferred from FLUXNET data. Journal of Geophysical Research, 2011, 116, .	3.3	522
13	Managing uncertainty in soil carbon feedbacks to climate change. Nature Climate Change, 2016, 6, 751-758.	8.1	491
14	Uncertainties in climate responses to past land cover change: First results from the LUCID intercomparison study. Geophysical Research Letters, 2009, 36, .	1.5	444
15	The Partitioning of Evapotranspiration into Transpiration, Soil Evaporation, and Canopy Evaporation in a GCM: Impacts on Landâ€“Atmosphere Interaction. Journal of Hydrometeorology, 2007, 8, 862-880.	0.7	399
16	Climate, ecosystems, and planetary futures: The challenge to predict life in Earth system models. Science, 2018, 359, .	6.0	397
17	Parameterization improvements and functional and structural advances in Version 4 of the Community Land Model. Journal of Advances in Modeling Earth Systems, 2011, 3, n/a-n/a.	1.3	367
18	A roadmap for improving the representation of photosynthesis in Earth system models. New Phytologist, 2017, 213, 22-42.	3.5	365

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19	The effect of vertically resolved soil biogeochemistry and alternate soil C and N models on C dynamics of CLM4. Biogeosciences, 2013, 10, 7109-7131.	1.3	359
20	A dynamic global vegetation model for use with climate models: concepts and description of simulated vegetation dynamics. Global Change Biology, 2003, 9, 1543-1566.	4.2	335
21	Systematic assessment of terrestrial biogeochemistry in coupled climateâ€"carbon models. Global Change Biology, 2009, 15, 2462-2484.	4.2	324
22	The Community Land Model and Its Climate Statistics as a Component of the Community Climate System Model. Journal of Climate, 2006, 19, 2302-2324.	1.2	320
23	Protecting climate with forests. Environmental Research Letters, 2008, 3, 044006.	2.2	313
24	Determining Robust Impacts of Land-Use-Induced Land Cover Changes on Surface Climate over North America and Eurasia: Results from the First Set of LUCID Experiments. Journal of Climate, 2012, 25, 3261-3281.	1.2	313
25	Modeling stomatal conductance in the earth system: linking leaf water-use efficiency and water transport along the soilâ€"plantâ€"atmosphere continuum. Geoscientific Model Development, 2014, 7, 2193-2222.	1.3	293
26	The CCSM4 Land Simulation, 1850â€"2005: Assessment of Surface Climate and New Capabilities. Journal of Climate, 2012, 25, 2240-2260.	1.2	276
27	Simulating the Biogeochemical and Biogeophysical Impacts of Transient Land Cover Change and Wood Harvest in the Community Climate System Model (CCSM4) from 1850 to 2100. Journal of Climate, 2012, 25, 3071-3095.	1.2	255
28	Land-atmosphere CO2exchange simulated by a land surface process model coupled to an atmospheric general circulation model. Journal of Geophysical Research, 1995, 100, 2817.	3.3	254
29	Integrating microbial physiology and physio-chemical principles in soils with the MIcrobial-MIneral Carbon Stabilization (MIMICS) model. Biogeosciences, 2014, 11, 3899-3917.	1.3	243
30	An Urban Parameterization for a Global Climate Model. Part I: Formulation and Evaluation for Two Cities. Journal of Applied Meteorology and Climatology, 2008, 47, 1038-1060.	0.6	232
31	Changes in Arctic vegetation amplify high-latitude warming through the greenhouse effect. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 1295-1300.	3.3	228
32	Use of FLUXNET in the Community Land Model development. Journal of Geophysical Research, 2008, 113, .	3.3	210
33	Effects of white roofs on urban temperature in a global climate model. Geophysical Research Letters, 2010, 37, .	1.5	169
34	Reconciling leaf physiological traits and canopy flux data: Use of the TRY and FLUXNET databases in the Community Land Model version 4. Journal of Geophysical Research, 2012, 117, .	3.3	169
35	Quantifying carbonâ€nitrogen feedbacks in the Community Land Model (CLM4). Geophysical Research Letters, 2010, 37, .	1.5	167
36	Evaluating litter decomposition in earth system models with longâ€term litterbag experiments: an example using the Community Land Model version 4 (<scp>CLM</scp>4). Global Change Biology, 2013, 19, 957-974.	4.2	164

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37	Temperature acclimation of photosynthesis and respiration: A key uncertainty in the carbon cycleâ€climate feedback. Geophysical Research Letters, 2015, 42, 8624-8631.	1.5	160
38	Preindustrial-Control and Twentieth-Century Carbon Cycle Experiments with the Earth System Model CESM1(BGC). Journal of Climate, 2014, 27, 8981-9005.	1.2	156
39	Representing life in the Earth system with soil microbial functional traits in the MIMICS model. Geoscientific Model Development, 2015, 8, 1789-1808.	1.3	154
40	Interactive Crop Management in the Community Earth System Model (CESM1): Seasonal Influences on Landâ€"Atmosphere Fluxes. Journal of Climate, 2012, 25, 4839-4859.	1.2	140
41	An examination of urban heat island characteristics in a global climate model. International Journal of Climatology, 2011, 31, 1848-1865.	1.5	130
42	Parameterization of Urban Characteristics for Global Climate Modeling. Annals of the American Association of Geographers, 2010, 100, 848-865.	3.0	128
43	Soil feedback drives the mid-Holocene North African monsoon northward in fully coupled CCSM2 simulations with a dynamic vegetation model. Climate Dynamics, 2004, 23, 791-802.	1.7	122
44	Carbon cycle confidence and uncertainty: Exploring variation among soil biogeochemical models. Global Change Biology, 2018, 24, 1563-1579.	4.2	122
45	Stomatal Function across Temporal and Spatial Scales: Deep-Time Trends, Land-Atmosphere Coupling and Global Models. Plant Physiology, 2017, 174, 583-602.	2.3	119
46	Effects of model structural uncertainty on carbon cycle projections: biological nitrogen fixation as a case study. Environmental Research Letters, 2015, 10, 044016.	2.2	109
47	Modeling canopy-induced turbulence in the Earth system: a unified parameterization of turbulent exchange within plant canopies and the roughness sublayer (CLM-ml v0). Geoscientific Model Development, 2018, 11, 1467-1496.	1.3	98
48	The role of surface roughness, albedo, and Bowen ratio on ecosystem energy balance in the Eastern United States. Agricultural and Forest Meteorology, 2018, 249, 367-376.	1.9	96
49	An Urban Parameterization for a Global Climate Model. Part II: Sensitivity to Input Parameters and the Simulated Urban Heat Island in Offline Simulations. Journal of Applied Meteorology and Climatology, 2008, 47, 1061-1076.	0.6	95
50	Assessment of global climate model land surface albedo using MODIS data. Geophysical Research Letters, 2003, 30, .	1.5	92
51	Effects of land use change on North American climate: impact of surface datasets and model biogeophysics. Climate Dynamics, 2004, 23, 117-132.	1.7	91
52	Reducing uncertainty in projections of terrestrial carbon uptake. Environmental Research Letters, 2017, 12, 044020.	2.2	84
53	Insights into mechanisms governing forest carbon response to nitrogen deposition: a modelâ€"data comparison using observed responses to nitrogen addition. Biogeosciences, 2013, 10, 3869-3887.	1.3	83
54	Evaluating soil biogeochemistry parameterizations in Earth system models with observations. Global Biogeochemical Cycles, 2014, 28, 211-222.	1.9	76

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55	Comparing optimal and empirical stomatal conductance models for application in Earth system models. Global Change Biology, 2018, 24, 5708-5723.	4.2	75
56	Moving beyond the incorrect but useful paradigm: reevaluating big-leaf and multilayer plant canopies to model biosphere-atmosphere fluxes â€“ a review. Agricultural and Forest Meteorology, 2021, 306, 108435.	1.9	64
57	Ozone exposure causes a decoupling of conductance and photosynthesis: implications for the Ball-Berry stomatal conductance model. Oecologia, 2012, 169, 651-659.	0.9	63
58	Beyond Static Benchmarking: Using Experimental Manipulations to Evaluate Land Model Assumptions. Global Biogeochemical Cycles, 2019, 33, 1289-1309.	1.9	59
59	Triose phosphate limitation in photosynthesis models reduces leaf photosynthesis and global terrestrial carbon storage. Environmental Research Letters, 2018, 13, 074025.	2.2	56
60	On the development of a coupled regional climateâ€“vegetation model RCMâ€“CLMâ€“CNâ€“DV and its validation in Tropical Africa. Climate Dynamics, 2016, 46, 515-539.	1.7	53
61	Model Structure and Climate Data Uncertainty in Historical Simulations of the Terrestrial Carbon Cycle (1850â€“2014). Global Biogeochemical Cycles, 2019, 33, 1310-1326.	1.9	53
62	Impacts of human alteration of the nitrogen cycle in the US on radiative forcing. Biogeochemistry, 2013, 114, 25-40.	1.7	51
63	Separating the Impact of Individual Land Surface Properties on the Terrestrial Surface Energy Budget in both the Coupled and Uncoupled Landâ€“Atmosphere System. Journal of Climate, 2019, 32, 5725-5744.	1.2	50
64	The Community Land Model underestimates land-use CO₂ emissions by neglecting soil disturbance from cultivation. Geoscientific Model Development, 2014, 7, 613-620.	1.3	49
65	Anthropogenic land cover changes in a GCM with surface albedo changes based on MODIS data. International Journal of Climatology, 2010, 30, 2105-2117.	1.5	44
66	Forests, Climate, and Public Policy: A 500-Year Interdisciplinary Odyssey. Annual Review of Ecology, Evolution, and Systematics, 2016, 47, 97-121.	3.8	43
67	Connecting mathematical ecosystems, realâ€world ecosystems, and climate science. New Phytologist, 2014, 202, 731-733.	3.5	38
68	Increasing the spatial and temporal impact of ecological research: A roadmap for integrating a novel terrestrial process into an Earth system model. Global Change Biology, 2022, 28, 665-684.	4.2	27
69	The emerging anthropogenic signal in landâ€“atmosphere carbon-cycle coupling. Nature Climate Change, 2014, 4, 796-800.	8.1	26
70	Fertilizing change. Nature Geoscience, 2008, 1, 645-646.	5.4	24
71	Evaluating the Climate Effects of Reforestation in New England Using a Weather Research and Forecasting (WRF) Model Multiphysics Ensemble. Journal of Climate, 2016, 29, 5141-5156.	1.2	24
72	Biophysical consequences of photosynthetic temperature acclimation for climate. Journal of Advances in Modeling Earth Systems, 2017, 9, 536-547.	1.3	24

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73	Cover Crops May Cause Winter Warming in Snowâ€Covered Regions. Geophysical Research Letters, 2018, 45, 9889-9897.	1.5	22
74	Presentâ€day springtime highâ€latitude surface albedo as a predictor of simulated climate sensitivity. Geophysical Research Letters, 2007, 34, .	1.5	20
75	Optimizing Available Network Resources to Address Questions in Environmental Biogeochemistry. BioScience, 2016, 66, 317-326.	2.2	20
76	A Comparison of the Diel Cycle of Modeled and Measured Latent Heat Flux During the Warm Season in a Colorado Subalpine Forest. Journal of Advances in Modeling Earth Systems, 2018, 10, 617-651.	1.3	19
77	High predictability of terrestrial carbon fluxes from an initialized decadal prediction system. Environmental Research Letters, 2019, 14, 124074.	2.2	19
78	Changes in Wood Biomass and Crop Yields in Response to Projected CO₂, O₃, Nitrogen Deposition, and Climate. Journal of Geophysical Research G: Biogeosciences, 2018, 123, 3262-3282.	1.3	15
79	Influence of Vertical Heterogeneities in the Canopy Microenvironment on Interannual Variability of Carbon Uptake in Temperate Deciduous Forests. Journal of Geophysical Research G: Biogeosciences, 2020, 125, e2020JG005658.	1.3	10
80	Simulating surface energy fluxes using the variable-resolution Community Earth System Model (VR-CESM). Theoretical and Applied Climatology, 2019, 138, 115-133.	1.3	9
81	Impacts of a revised surface roughness parameterization in the Community Land Model 5.1. Geoscientific Model Development, 2022, 15, 2365-2393.	1.3	9
82	The signature of internal variability in the terrestrial carbon cycle. Environmental Research Letters, 2021, 16, 034022.	2.2	7
83	Terrestrial Biosphere Models. , 2019, , 1-24.		4
84	Forests and Global Change. Ecological Studies, 2011, , 711-725.	0.4	4
85	Terrestrial Ecosystems and Earth System Models. , 2015, , 453-482.		2
86	Turbulent Fluxes and Scalar Profiles in the Surface Layer. , 2019, , 80-100.		2
87	Leaf Photosynthesis. , 2019, , 167-188.		2
88	Plant Hydraulics. , 2019, , 213-227.		2
89	Ecosystems and Climate. , 0, , 1-20.		1
90	Soil Temperature. , 2019, , 64-79.		1

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91	Surface Energy Fluxes. , 2019, , 101-114.		1
92	Stomatal Conductance. , 2019, , 189-212.		1
93	Radiative Transfer. , 2019, , 228-259.		1
94	Vegetation Demography. , 2019, , 344-364.		1
95	Canadian climate aberration. Nature Geoscience, 2013, 6, 21-22.	5.4	0
96	Soil Biogeochemistry. , 0, , 358-375.		0
97	Landscapes and Disturbances. , 0, , 400-421.		0
98	Anthropogenic Land Use and Land-Cover Change. , 0, , 523-562.		0
99	Carbon Cycleâ€"Climate Feedbacks. , 0, , 563-593.		0
100	Climate Intervention and Geoengineering. , 0, , 652-672.		0
101	Plant Canopies. , 0, , 264-288.		0
102	Quantitative Description of Ecosystems. , 2019, , 25-39.		0
103	Fundamentals of Energy and Mass Transfer. , 2019, , 40-52.		0
104	Mathematical Formulation of Biological Flux Rates. , 2019, , 53-63.		0
105	Soil Moisture. , 2019, , 115-133.		0
106	Hydrologic Scaling and Spatial Heterogeneity. , 2019, , 134-151.		0
107	Leaf Temperature and Energy Fluxes. , 2019, , 152-166.		0
108	Plant Canopies. , 2019, , 260-279.		0

#	Article	IF	Citations
109	Scalar Canopy Profiles. , 2019, , 280-300.		0
110	Biogeochemical Models. , 2019, , 301-321.		0
111	Soil Biogeochemistry. , 2019, , 322-343.		0
112	Canopy Chemistry. , 2019, , 365-380.		0