Forrest Hoffman

List of Publications by Year
in descending order

120 papers	10,533 citations	50170 46 h-index	34900 98 g-index
143 all docs	143 docs citations	143 times ranked	15913 citing authors

#	Article	IF	Citations
1	Global Carbon Budget 2018. Earth System Science Data, 2018, 10, 2141-2194.	3.7	1,167
2	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
3	Causes of variation in soil carbon simulations from CMIP5 Earth system models and comparison with observations. Biogeosciences, 2013, 10, 1717-1736.	1.3	593
4	<scp>CTFS</scp>â€Forest<scp>GEO</scp>: a worldwide network monitoring forests in an era of global change. Global Change Biology, 2015, 21, 528-549.	4.2	473
5	Taking climate model evaluation to the next level. Nature Climate Change, 2019, 9, 102-110.	8.1	407
6	Plant responses to increasing CO ₂ reduce estimates of climate impacts on drought severity. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 10019-10024.	3.3	399
7	Observed 20th century desert dust variability: impact on climate and biogeochemistry. Atmospheric Chemistry and Physics, 2010, 10, 10875-10893.	1.9	355
8	Systematic assessment of terrestrial biogeochemistry in coupled climateâ€“carbon models. Global Change Biology, 2009, 15, 2462-2484.	4.2	324
9	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
10	Sustained climate warming drives declining marine biological productivity. Science, 2018, 359, 1139-1143.	6.0	276
11	A framework for benchmarking land models. Biogeosciences, 2012, 9, 3857-3874.	1.3	267
12	Photoperiodic regulation of the seasonal pattern of photosynthetic capacity and the implications for carbon cycling. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 8612-8617.	3.3	247
13	A continental strategy for the National Ecological Observatory Network. Frontiers in Ecology and the Environment, 2008, 6, 282-284.	1.9	246
14	Potential of Multivariate Quantitative Methods for Delineation and Visualization of Ecoregions. Environmental Management, 2004, 34, S39-S60.	1.2	211
15	North American Carbon Program (NACP) regional interim synthesis: Terrestrial biospheric model intercomparison. Ecological Modelling, 2012, 232, 144-157.	1.2	207
16	Fire dynamics during the 20th century simulated by the Community Land Model. Biogeosciences, 2010, 7, 1877-1902.	1.3	194
17	C4MIP â€“ The Coupled Climateâ€“Carbon Cycle Model Intercomparison Project: experimental protocol for CMIP6. Geoscientific Model Development, 2016, 9, 2853-2880.	1.3	186
18	The International Land Model Benchmarking (ILAMB) System: Design, Theory, and Implementation. Journal of Advances in Modeling Earth Systems, 2018, 10, 2731-2754.	1.3	175

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19	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
20	A global framework for monitoring phenological responses to climate change. Geophysical Research Letters, 2005, 32, n/a-n/a.	1.5	151
21	Human-induced greening of the northern extratropical land surface. Nature Climate Change, 2016, 6, 959-963.	8.1	145
22	Spatial heterogeneity and environmental predictors of permafrost region soil organic carbon stocks. Science Advances, 2021, 7, .	4.7	130
23	Impact of mesophyll diffusion on estimated global land CO ₂ fertilization. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 15774-15779.	3.3	129
24	Causes and implications of persistent atmospheric carbon dioxide biases in Earth System Models. Journal of Geophysical Research G: Biogeosciences, 2014, 119, 141-162.	1.3	121
25	Disentangling climatic and anthropogenic controls on global terrestrial evapotranspiration trends. Environmental Research Letters, 2015, 10, 094008.	2.2	119
26	Global Latitudinal-Asymmetric Vegetation Growth Trends and Their Driving Mechanisms: 1982â€“2009. Remote Sensing, 2013, 5, 1484-1497.	1.8	117
27	Linking models of human behaviour and climate alters projected climate change. Nature Climate Change, 2018, 8, 79-84.	8.1	115
28	Transient dynamics of terrestrial carbon storage: mathematical foundation and its applications. Biogeosciences, 2017, 14, 145-161.	1.3	91
29	Mapcurves: a quantitative method for comparing categorical maps. Journal of Geographical Systems, 2006, 8, 187-208.	1.9	90
30	Mapping environments at risk under different global climate change scenarios. Ecology Letters, 2004, 8, 53-60.	3.0	84
31	New analysis reveals representativeness of the AmeriFlux network. Eos, 2003, 84, 529.	0.1	83
32	Using multivariate clustering to characterize ecoregion borders. Computing in Science and Engineering, 1999, 1, 18-25.	1.2	81
33	Forest response to rising CO2 drives zonally asymmetric rainfall change over tropical land. Nature Climate Change, 2018, 8, 434-440.	8.1	80
34	Use of the KÃ¶ppenâ€“Trewartha climate classification to evaluate climatic refugia in statistically derived ecoregions for the Peopleâ€™s Republic of China. Climatic Change, 2010, 98, 113-131.	1.7	77
35	Representing Nitrogen, Phosphorus, and Carbon Interactions in the E3SM Land Model: Development and Global Benchmarking. Journal of Advances in Modeling Earth Systems, 2019, 11, 2238-2258.	1.3	74
36	Parallel k-Means Clustering for Quantitative Ecoregion Delineation Using Large Data Sets. Procedia Computer Science, 2011, 4, 1602-1611.	1.2	66

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37	NEON: a hierarchically designed national ecological network. Frontiers in Ecology and the Environment, 2007, 5, 59-59.	1.9	65
38	The DOE E3SM v1.1 Biogeochemistry Configuration: Description and Simulated Ecosystemâ€Climate Responses to Historical Changes in Forcing. Journal of Advances in Modeling Earth Systems, 2020, 12, e2019MS001766.	1.3	65
39	Technical assessment and evaluation of environmental models and software: Letter to the Editor. Environmental Modelling and Software, 2011, 26, 328-336.	1.9	64
40	Multicentury changes in ocean and land contributions to the climateâ€carbon feedback. Global Biogeochemical Cycles, 2015, 29, 744-759.	1.9	63
41	The impact of climate, CO₂, nitrogen deposition and land use change on simulated contemporary global river flow. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	58
42	Enhancing global change experiments through integration of remoteâ€sensing techniques. Frontiers in Ecology and the Environment, 2019, 17, 215-224.	1.9	55
43	Oscillatory behavior of two nonlinear microbial models of soil carbon decomposition. Biogeosciences, 2014, 11, 1817-1831.	1.3	53
44	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
45	A Practical Map-Analysis Tool for Detecting Potential Dispersal Corridors. Landscape Ecology, 2005, 20, 361-373.	1.9	51
46	Importance and strength of environmental controllers of soil organic carbon changes with scale. Geoderma, 2020, 375, 114472.	2.3	49
47	Atmospheric Carbon Dioxide Variability in the Community Earth System Model: Evaluation and Transient Dynamics during the Twentieth and Twenty-First Centuries. Journal of Climate, 2013, 26, 4447-4475.	1.2	48
48	Using Clustered Climate Regimes to Analyze and Compare Predictions from Fully Coupled General Circulation Models. Earth Interactions, 2005, 9, 1-27.	0.7	46
49	Interactions between land use change and carbon cycle feedbacks. Global Biogeochemical Cycles, 2017, 31, 96-113.	1.9	46
50	Potential ecological impacts of climate intervention by reflecting sunlight to cool Earth. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	46
51	A Fractal Landscape Realizer for Generating Synthetic Maps. Ecology and Society, 2002, 6, .	0.9	46
52	Beyond ecosystem modeling: A roadmap to community cyberinfrastructure for ecological dataâ€model integration. Global Change Biology, 2021, 27, 13-26.	4.2	44
53	Responses of two nonlinear microbial models to warming and increased carbon input. Biogeosciences, 2016, 13, 887-902.	1.3	43
54	Transit times and mean ages for nonautonomous and autonomous compartmental systems. Journal of Mathematical Biology, 2016, 73, 1379-1398.	0.8	40

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55	Mapping crops within the growing season across the United States. Remote Sensing of Environment, 2020, 251, 112048.	4.6	40
56	Representativeness-based sampling network design for the State of Alaska. Landscape Ecology, 2013, 28, 1567-1586.	1.9	39
57	Estimating heterotrophic respiration at large scales: challenges, approaches, and next steps. Ecosphere, 2016, 7, e01380.	1.0	35
58	Arctic Vegetation Mapping Using Unsupervised Training Datasets and Convolutional Neural Networks. Remote Sensing, 2019, 11, 69.	1.8	35
59	Mapping Arctic Plant Functional Type Distributions in the Barrow Environmental Observatory Using WorldView-2 and LiDAR Datasets. Remote Sensing, 2016, 8, 733.	1.8	34
60	Phosphorus feedbacks constraining tropical ecosystem responses to changes in atmospheric CO₂ and climate. Geophysical Research Letters, 2016, 43, 7205-7214.	1.5	32
61	The Do-It-Yourself Supercomputer. Scientific American, 2001, 285, 72-79.	1.0	31
62	The Effects of Phosphorus Cycle Dynamics on Carbon Sources and Sinks in the Amazon Region: A Modeling Study Using ELM v1. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 3686-3698.	1.3	29
63	HBGC123D: a high-performance computer model of coupled hydrogeological and biogeochemical processes. Computers and Geosciences, 2001, 27, 1231-1242.	2.0	27
64	An estimate of monthly global emissions of anthropogenic CO₂: Impact on the seasonal cycle of atmospheric CO₂. Journal of Geophysical Research, 2008, 113, .	3.3	24
65	Cluster Analysis-Based Approaches for Geospatiotemporal Data Mining of Massive Data Sets for Identification of Forest Threats. Procedia Computer Science, 2011, 4, 1612-1621.	1.2	24
66	Plant Physiological Responses to Rising CO₂ Modify Simulated Daily Runoff Intensity With Implications for Globalâ€Scale Flood Risk Assessment. Geophysical Research Letters, 2018, 45, 12,457.	1.5	23
67	Ensemble Machine Learning Approach Improves Predicted Spatial Variation of Surface Soil Organic Carbon Stocks in Data-Limited Northern Circumpolar Region. Frontiers in Big Data, 2020, 3, 528441.	1.8	22
68	The Earth has humans, so why donâ€™t our climate models?. Climatic Change, 2020, 163, 181-188.	1.7	21
69	Representativeness assessment of the pan-Arctic eddy covariance site network and optimized future enhancements. Biogeosciences, 2022, 19, 559-583.	1.3	21
70	Wildfire Mapping in Interior Alaska Using Deep Neural Networks on Imbalanced Datasets. , 2018, , .		20
71	Soil Moisture Variability Intensifies and Prolongs Eastern Amazon Temperature and Carbon Cycle Response to El NiÃ±oâ€“Southern Oscillation. Journal of Climate, 2019, 32, 1273-1292.	1.2	20
72	Data Mining in Earth System Science (DMESS 2011). Procedia Computer Science, 2011, 4, 1450-1455.	1.2	19

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73	Machine learningâ€"based observation-constrained projections reveal elevated global socioeconomic risks from wildfire. Nature Communications, 2022, 13, 1250.	5.8	19
74	Human-caused long-term changes in global aridity. Npj Climate and Atmospheric Science, 2021, 4, .	2.6	18
75	Significant inconsistency of vegetation carbon density in CMIP5 Earth system models against observational data. Journal of Geophysical Research G: Biogeosciences, 2017, 122, 2282-2297.	1.3	17
76	Vectorizing the Community Land Model. International Journal of High Performance Computing Applications, 2005, 19, 247-260.	2.4	16
77	Global distribution and surface activity of macromolecules in offline simulations of marine organic chemistry. Biogeochemistry, 2015, 126, 25-56.	1.7	15
78	Streamflow in the Columbia River Basin: Quantifying Changes Over the Period 1951â€2008 and Determining the Drivers of Those Changes. Water Resources Research, 2019, 55, 6640-6652.	1.7	15
79	Quantifying the drivers and predictability of seasonal changes in African fire. Nature Communications, 2020, 11, 2893.	5.8	15
80	Addressing numerical challenges in introducing a reactive transport code into a land surface model: a biogeochemical modeling proof-of-concept with CLMâ€"PFLOTRAN 1.0. Geoscientific Model Development, 2016, 9, 927-946.	1.3	14
81	Mapping ecoregions under climate change: a case study from the biological â€˜crossroadsâ€™ of three continents, Turkey. Landscape Ecology, 2019, 34, 35-50.	1.9	13
82	Multivariate geographic clustering in a metacomputing environment using Globus. , 1999, , .		12
83	Does Marine Surface Tension Have Global Biogeography? Addition for the OCEANFILMS Package. Atmosphere, 2018, 9, 216.	1.0	10
84	Transport in the subtropical lowermost stratosphere during the Cirrus Regional Study of Tropical Anvils and Cirrus Layersâ€"Florida Area Cirrus Experiment. Journal of Geophysical Research, 2007, 112, .	3.3	9
85	Identification and Visualization of Dominant Patterns and Anomalies in Remotely Sensed Vegetation Phenology Using a Parallel Tool for Principal Components Analysis. Procedia Computer Science, 2013, 18, 2396-2405.	1.2	9
86	Contribution of environmental forcings to US runoff changes for the period 1950â€"2010. Environmental Research Letters, 2018, 13, 054023.	2.2	9
87	Modelling tree stemâ€water dynamics over an Amazonian rainforest. Ecohydrology, 2020, 13, e2180.	1.1	9
88	Interannual variability and climatic sensitivity of global wildfire activity. Advances in Climate Change Research, 2021, 12, 686-695.	2.1	9
89	Visualizing Life Zone Boundary Sensitivities Across Climate Models and Temporal Spans. Procedia Computer Science, 2011, 4, 1582-1591.	1.2	8
90	Assessing terrestrial biogeochemical feedbacks in a strategically geoengineered climate. Environmental Research Letters, 2020, 15, 104043.	2.2	8

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91	Results from the carbon-land model intercomparison project (C-LAMP) and availability of the data on the earth system grid (ESG). Journal of Physics: Conference Series, 2007, 78, 012026.	0.3	7
92	Characterization and Classification of Vegetation Canopy Structure and Distribution within the Great Smoky Mountains National Park Using LiDAR. , 2015, , .		7
93	Climate Change Impacts on Natural Sulfur Production: Ocean Acidification and Community Shifts. Atmosphere, 2018, 9, 167.	1.0	7
94	Uncertainty Quantification of Extratropical Forest Biomass in CMIP5 Models over the Northern Hemisphere. Scientific Reports, 2018, 8, 10962.	1.6	7
95	Biogeochemical Equation of State for the Sea-Air Interface. Atmosphere, 2019, 10, 230.	1.0	7
96	Convolutional Neural Network Approach for Mapping Arctic Vegetation Using Multi-Sensor Remote Sensing Fusion. , 2017, , .		6
97	Country-level land carbon sink and its causing components by the middle of the twenty-first century. Ecological Processes, 2021, 10, 61.	1.6	5
98	Geospatiotemporal data mining in an early warning system for forest threats in the United States. , 2010, , .		4
99	Parallel Multivariate Spatio-Temporal Clustering of Large Ecological Datasets on Hybrid Supercomputers. , 2017, , .		4
100	Evaluating Uncertainties in Marine Biogeochemical Models: Benchmarking Aerosol Precursors. Atmosphere, 2018, 9, 184.	1.0	4
101	GeoComputation 2009. Lecture Notes in Computer Science, 2009, , 345-348.	1.0	4
102	Querying for Feature Extraction and Visualization in Climate Modeling. Lecture Notes in Computer Science, 2009, , 416-425.	1.0	4
103	Quantifying Carbon Cycle Extremes and Attributing Their Causes Under Climate and Land Use and Land Cover Change From 1850 to 2300. Journal of Geophysical Research G: Biogeosciences, 2022, 127, .	1.3	4
104	A geochemical expert system prototype using object-oriented knowledge representation and a production rule system. Computers and Geosciences, 1993, 19, 53-60.	2.0	3
105	Web enabled collaborative climate visualization in the Earth System Grid. , 2008, , .		3
106	A Functional Response Metric for the Temperature Sensitivity of Tropical Ecosystems. Earth Interactions, 2018, 22, 1-20.	0.7	3
107	Parallel computing with Linux. Xrds, 1999, 6, 23-27.	0.2	2
108	Time-varying multivariate visualization for understanding terrestrial biogeochemistry. Journal of Physics: Conference Series, 2008, 125, 012093.	0.3	2

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109	Evaluations of CMIP5 simulations over cropland. Proceedings of SPIE, 2015, , .	0.8	2
110	Parallel k-Means Clustering of Geospatial Data Sets Using Manycore CPU Architectures. , 2018, , .		2
111	Predictability of tropical vegetation greenness using sea surface temperatures*. Environmental Research Communications, 2019, 1, 031003.	0.9	2
112	Evaluating Carbon Extremes in a Coupled Climate-Carbon Cycle Simulation. , 2019, , .		2
113	PORTING AND PERFORMANCE OF THE COMMUNITY CLIMATE SYSTEM MODEL (CCSM3) ON THE CRAY X1. , 2005, , .		2
114	Terrestrial biogeochemistry in the community climate system model (CCSM). Journal of Physics: Conference Series, 2006, 46, 363-369.	0.3	1
115	Data Mining Geophysical Content from Satellites and Global Climate Models. , 2009, , .		1
116	WZ Sagittae, SN 1054 and SN 1006 space weather. Trends in Green Chemistry, 2017, 03, .	0.2	1
117	Modeling Functional Organic Chemistry in Arctic Rivers: An Idealized Siberian System. Atmosphere, 2020, 11, 1090.	1.0	1
118	Automated Integration of Continental-Scale Observations in Near-Real Time for Simulation and Analysis of Biosphereâ€"Atmosphere Interactions. Communications in Computer and Information Science, 2020, , 204-225.	0.4	1
119	Deep Transfer Learning With Field-Based Measurements for Large Area Classification. , 2019, , .		0
120	Hackathon Speeds Progress Toward Climate Model Collaboration. Eos, 2019, 100, .	0.1	0