Forrest Hoffman

List of Publications by Year
in descending order

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Version: 2024-02-01

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	Representativeness assessment of the pan-Arctic eddy covariance site network and optimized future enhancements. Biogeosciences, 2022, 19, 559-583.	1.3	21
2	Machine learningâ€“based observation-constrained projections reveal elevated global socioeconomic risks from wildfire. Nature Communications, 2022, 13, 1250.	5.8	19
3	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
4	Beyond ecosystem modeling: A roadmap to community cyberinfrastructure for ecological dataâ€model integration. Global Change Biology, 2021, 27, 13-26.	4.2	44
5	Spatial heterogeneity and environmental predictors of permafrost region soil organic carbon stocks. Science Advances, 2021, 7, .	4.7	130
6	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
7	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
8	Interannual variability and climatic sensitivity of global wildfire activity. Advances in Climate Change Research, 2021, 12, 686-695.	2.1	9
9	Human-caused long-term changes in global aridity. Npj Climate and Atmospheric Science, 2021, 4, .	2.6	18
10	Modelling tree stemâ€water dynamics over an Amazonian rainforest. Ecohydrology, 2020, 13, e2180.	1.1	9
11	Mapping crops within the growing season across the United States. Remote Sensing of Environment, 2020, 251, 112048.	4.6	40
12	The Earth has humans, so why donâ€™t our climate models?. Climatic Change, 2020, 163, 181-188.	1.7	21
13	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
14	Modeling Functional Organic Chemistry in Arctic Rivers: An Idealized Siberian System. Atmosphere, 2020, 11, 1090.	1.0	1
15	Importance and strength of environmental controllers of soil organic carbon changes with scale. Geoderma, 2020, 375, 114472.	2.3	49
16	Quantifying the drivers and predictability of seasonal changes in African fire. Nature Communications, 2020, 11, 2893.	5.8	15
17	Assessing terrestrial biogeochemical feedbacks in a strategically geoengineered climate. Environmental Research Letters, 2020, 15, 104043.	2.2	8
18	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

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19	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
20	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
21	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
22	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
23	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
24	Arctic Vegetation Mapping Using Unsupervised Training Datasets and Convolutional Neural Networks. Remote Sensing, 2019, 11, 69.	1.8	35
25	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
26	Biogeochemical Equation of State for the Sea-Air Interface. Atmosphere, 2019, 10, 230.	1.0	7
27	Predictability of tropical vegetation greenness using sea surface temperatures*. Environmental Research Communications, 2019, 1, 031003.	0.9	2
28	Enhancing global change experiments through integration of remoteâ€sensing techniques. Frontiers in Ecology and the Environment, 2019, 17, 215-224.	1.9	55
29	Deep Transfer Learning With Field-Based Measurements for Large Area Classification. , 2019, , .		0
30	Evaluating Carbon Extremes in a Coupled Climate-Carbon Cycle Simulation. , 2019, , .		2
31	Taking climate model evaluation to the next level. Nature Climate Change, 2019, 9, 102-110.	8.1	407
32	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
33	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
34	Hackathon Speeds Progress Toward Climate Model Collaboration. Eos, 2019, 100, .	0.1	0
35	Sustained climate warming drives declining marine biological productivity. Science, 2018, 359, 1139-1143.	6.0	276
36	Contribution of environmental forcings to US runoff changes for the period 1950â€“2010. Environmental Research Letters, 2018, 13, 054023.	2.2	9

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37	Linking models of human behaviour and climate alters projected climate change. Nature Climate Change, 2018, 8, 79-84.	8.1	115
38	Forest response to rising CO2 drives zonally asymmetric rainfall change over tropical land. Nature Climate Change, 2018, 8, 434-440.	8.1	80
39	Parallel k-Means Clustering of Geospatial Data Sets Using Manycore CPU Architectures. , 2018, , .		2
40	Wildfire Mapping in Interior Alaska Using Deep Neural Networks on Imbalanced Datasets. , 2018, , .		20
41	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
42	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
43	A Functional Response Metric for the Temperature Sensitivity of Tropical Ecosystems. Earth Interactions, 2018, 22, 1-20.	0.7	3
44	Evaluating Uncertainties in Marine Biogeochemical Models: Benchmarking Aerosol Precursors. Atmosphere, 2018, 9, 184.	1.0	4
45	Climate Change Impacts on Natural Sulfur Production: Ocean Acidification and Community Shifts. Atmosphere, 2018, 9, 167.	1.0	7
46	Does Marine Surface Tension Have Global Biogeography? Addition for the OCEANFILMS Package. Atmosphere, 2018, 9, 216.	1.0	10
47	Uncertainty Quantification of Extratropical Forest Biomass in CMIP5 Models over the Northern Hemisphere. Scientific Reports, 2018, 8, 10962.	1.6	7
48	Global Carbon Budget 2018. Earth System Science Data, 2018, 10, 2141-2194.	3.7	1,167
49	Interactions between land use change and carbon cycle feedbacks. Global Biogeochemical Cycles, 2017, 31, 96-113.	1.9	46
50	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
51	Convolutional Neural Network Approach for Mapping Arctic Vegetation Using Multi-Sensor Remote Sensing Fusion. , 2017, , .		6
52	Parallel Multivariate Spatio-Temporal Clustering of Large Ecological Datasets on Hybrid Supercomputers. , 2017, , .		4
53	Transient dynamics of terrestrial carbon storage: mathematical foundation and its applications. Biogeosciences, 2017, 14, 145-161.	1.3	91
54	WZ Sagittae, SN 1054 and SN 1006 space weather. Trends in Green Chemistry, 2017, 03, .	0.2	1

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55	C4MIP â€“ The Coupled Climateâ€“Carbon Cycle Model Intercomparison Project: experimental protocol for CMIP6. Geoscientific Model Development, 2016, 9, 2853-2880.	1.3	186
56	Responses of two nonlinear microbial models to warming and increased carbon input. Biogeosciences, 2016, 13, 887-902.	1.3	43
57	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
58	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
59	Estimating heterotrophic respiration at large scales: challenges, approaches, and next steps. Ecosphere, 2016, 7, e01380.	1.0	35
60	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
61	Phosphorus feedbacks constraining tropical ecosystem responses to changes in atmospheric CO₂ and climate. Geophysical Research Letters, 2016, 43, 7205-7214.	1.5	32
62	Transit times and mean ages for nonautonomous and autonomous compartmental systems. Journal of Mathematical Biology, 2016, 73, 1379-1398.	0.8	40
63	Human-induced greening of the northern extratropical land surface. Nature Climate Change, 2016, 6, 959-963.	8.1	145
64	Multicentury changes in ocean and land contributions to the climateâ€carbon feedback. Global Biogeochemical Cycles, 2015, 29, 744-759.	1.9	63
65	Disentangling climatic and anthropogenic controls on global terrestrial evapotranspiration trends. Environmental Research Letters, 2015, 10, 094008.	2.2	119
66	Evaluations of CMIP5 simulations over cropland. Proceedings of SPIE, 2015, , .	0.8	2
67	Characterization and Classification of Vegetation Canopy Structure and Distribution within the Great Smoky Mountains National Park Using LiDAR. , 2015, , .		7
68	Global distribution and surface activity of macromolecules in offline simulations of marine organic chemistry. Biogeochemistry, 2015, 126, 25-56.	1.7	15
69	<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
70	Oscillatory behavior of two nonlinear microbial models of soil carbon decomposition. Biogeosciences, 2014, 11, 1817-1831.	1.3	53
71	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
72	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

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73	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
74	Representativeness-based sampling network design for the State of Alaska. Landscape Ecology, 2013, 28, 1567-1586.	1.9	39
75	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
76	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
77	Causes of variation in soil carbon simulations from CMIP5 Earth system models and comparison with observations. Biogeosciences, 2013, 10, 1717-1736.	1.3	593
78	Global Latitudinal-Asymmetric Vegetation Growth Trends and Their Driving Mechanisms: 1982â€“2009. Remote Sensing, 2013, 5, 1484-1497.	1.8	117
79	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
80	A framework for benchmarking land models. Biogeosciences, 2012, 9, 3857-3874.	1.3	267
81	North American Carbon Program (NACP) regional interim synthesis: Terrestrial biospheric model intercomparison. Ecological Modelling, 2012, 232, 144-157.	1.2	207
82	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
83	Visualizing Life Zone Boundary Sensitivities Across Climate Models and Temporal Spans. Procedia Computer Science, 2011, 4, 1582-1591.	1.2	8
84	Parallel k-Means Clustering for Quantitative Ecoregion Delineation Using Large Data Sets. Procedia Computer Science, 2011, 4, 1602-1611.	1.2	66
85	Technical assessment and evaluation of environmental models and software: Letter to the Editor. Environmental Modelling and Software, 2011, 26, 328-336.	1.9	64
86	Data Mining in Earth System Science (DMESS 2011). Procedia Computer Science, 2011, 4, 1450-1455.	1.2	19
87	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
88	Observed 20th century desert dust variability: impact on climate and biogeochemistry. Atmospheric Chemistry and Physics, 2010, 10, 10875-10893.	1.9	355
89	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
90	Fire dynamics during the 20th century simulated by the Community Land Model. Biogeosciences, 2010, 7, 1877-1902.	1.3	194

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91	Geospatiotemporal data mining in an early warning system for forest threats in the United States. , 2010, , .		4
92	Systematic assessment of terrestrial biogeochemistry in coupled climateâ€“carbon models. Global Change Biology, 2009, 15, 2462-2484.	4.2	324
93	Data Mining Geophysical Content from Satellites and Global Climate Models. , 2009, , .		1
94	GeoComputation 2009. Lecture Notes in Computer Science, 2009, , 345-348.	1.0	4
95	Querying for Feature Extraction and Visualization in Climate Modeling. Lecture Notes in Computer Science, 2009, , 416-425.	1.0	4
96	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
97	A continental strategy for the National Ecological Observatory Network. Frontiers in Ecology and the Environment, 2008, 6, 282-284.	1.9	246
98	Web enabled collaborative climate visualization in the Earth System Grid. , 2008, , .		3
99	Time-varying multivariate visualization for understanding terrestrial biogeochemistry. Journal of Physics: Conference Series, 2008, 125, 012093.	0.3	2
100	NEON: a hierarchically designed national ecological network. Frontiers in Ecology and the Environment, 2007, 5, 59-59.	1.9	65
101	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
102	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
103	Terrestrial biogeochemistry in the community climate system model (CCSM). Journal of Physics: Conference Series, 2006, 46, 363-369.	0.3	1
104	Mapcurves: a quantitative method for comparing categorical maps. Journal of Geographical Systems, 2006, 8, 187-208.	1.9	90
105	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
106	Using Clustered Climate Regimes to Analyze and Compare Predictions from Fully Coupled General Circulation Models. Earth Interactions, 2005, 9, 1-27.	0.7	46
107	A Practical Map-Analysis Tool for Detecting Potential Dispersal Corridors. Landscape Ecology, 2005, 20, 361-373.	1.9	51
108	Vectorizing the Community Land Model. International Journal of High Performance Computing Applications, 2005, 19, 247-260.	2.4	16

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109	A global framework for monitoring phenological responses to climate change. Geophysical Research Letters, 2005, 32, n/a-n/a.	1.5	151
110	PORTING AND PERFORMANCE OF THE COMMUNITY CLIMATE SYSTEM MODEL (CCSM3) ON THE CRAY X1. , 2005, , .		2
111	Mapping environments at risk under different global climate change scenarios. Ecology Letters, 2004, 8, 53-60.	3.0	84
112	Potential of Multivariate Quantitative Methods for Delineation and Visualization of Ecoregions. Environmental Management, 2004, 34, S39-S60.	1.2	211
113	New analysis reveals representativeness of the AmeriFlux network. Eos, 2003, 84, 529.	0.1	83
114	A Fractal Landscape Realizer for Generating Synthetic Maps. Ecology and Society, 2002, 6, .	0.9	46
115	The Do-It-Yourself Supercomputer. Scientific American, 2001, 285, 72-79.	1.0	31
116	HBGC123D: a high-performance computer model of coupled hydrogeological and biogeochemical processes. Computers and Geosciences, 2001, 27, 1231-1242.	2.0	27
117	Multivariate geographic clustering in a metacomputing environment using Globus. , 1999, , .		12
118	Using multivariate clustering to characterize ecoregion borders. Computing in Science and Engineering, 1999, 1, 18-25.	1.2	81
119	Parallel computing with Linux. Xrds, 1999, 6, 23-27.	0.2	2
120	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