Shawn Paul Serbin

List of Publications by Year
in descending order

96	5,693	76326	82547
papers	citations	40 h-index	72 g-index

118	118	118	7089
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Vegetation demographics in Earth System Models: A review of progress and priorities. Global Change Biology, 2018, 24, 35-54.	9.5	478
2	A roadmap for improving the representation of photosynthesis in Earth system models. New Phytologist, 2017, 213, 22-42.	7.3	365
3	Spectroscopic determination of leaf morphological and biochemical traits for northern temperate and boreal tree species. Ecological Applications, 2014, 24, 1651-1669.	3.8	273
4	Leaf optical properties reflect variation in photosynthetic metabolism and its sensitivity to temperature. Journal of Experimental Botany, 2012, 63, 489-502.	4.8	240
5	Imaging spectroscopy algorithms for mapping canopy foliar chemical and morphological traits and their uncertainties. Ecological Applications, 2015, 25, 2180-2197.	3.8	195
6	Hyperspectral reflectance as a tool to measure biochemical and physiological traits in wheat. Journal of Experimental Botany, 2018, 69, 483-496.	4.8	190
7	Impacts of recent climate change on Wisconsin corn and soybean yield trends. Environmental Research Letters, 2008, 3, 034003.	5.2	189
8	A test of the â€˜oneâ€point methodâ€™ for estimating maximum carboxylation capacity from fieldâ€measured, lightâ€saturated photosynthesis. New Phytologist, 2016, 210, 1130-1144.	7.3	159
9	Global photosynthetic capacity is optimized to the environment. Ecology Letters, 2019, 22, 506-517.	6.4	153
10	NASA's surface biology and geology designated observable: A perspective on surface imaging algorithms. Remote Sensing of Environment, 2021, 257, 112349.	11.0	148
11	Modelling <scp>C</scp>₃ photosynthesis from the chloroplast to the ecosystem. Plant, Cell and Environment, 2013, 36, 1641-1657.	5.7	145
12	Remotely estimating photosynthetic capacity, and its response to temperature, in vegetation canopies using imaging spectroscopy. Remote Sensing of Environment, 2015, 167, 78-87.	11.0	137
13	Spatial and temporal validation of the MODIS LAI and FPAR products across a boreal forest wildfire chronosequence. Remote Sensing of Environment, 2013, 133, 71-84.	11.0	134
14	Associations of Leaf Spectra with Genetic and Phylogenetic Variation in Oaks: Prospects for Remote Detection of Biodiversity. Remote Sensing, 2016, 8, 221.	4.0	132
15	Using leaf optical properties to detect ozone effects on foliar biochemistry. Photosynthesis Research, 2014, 119, 65-76.	2.9	121
16	Seasonal variability of multiple leaf traits captured by leaf spectroscopy at two temperate deciduous forests. Remote Sensing of Environment, 2016, 179, 1-12.	11.0	121
17	ISS observations offer insights into plant function. Nature Ecology and Evolution, 2017, 1, 194.	7.8	94
18	A quantitative assessment of a terrestrial biosphere model's data needs across North American biomes. Journal of Geophysical Research G: Biogeosciences, 2014, 119, 286-300.	3.0	92

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19	Using high spatial resolution satellite imagery to map forest burn severity across spatial scales in a Pine Barrens ecosystem. Remote Sensing of Environment, 2017, 191, 95-109.	11.0	92
20	Spectroscopic determination of ecologically relevant plant secondary metabolites. Methods in Ecology and Evolution, 2016, 7, 1402-1412.	5.2	88
21	From the Arctic to the tropics: multibiome prediction of leaf mass per area using leaf reflectance. New Phytologist, 2019, 224, 1557-1568.	7.3	86
22	Convergence in relationships between leaf traits, spectra and age across diverse canopy environments and two contrasting tropical forests. New Phytologist, 2017, 214, 1033-1048.	7.3	83
23	Benchmarking and parameter sensitivity of physiological and vegetation dynamics using the Functionally Assembled Terrestrial Ecosystem Simulator (FATES) at Barro Colorado Island, Panama. Biogeosciences, 2020, 17, 3017-3044.	3.3	82
24	Patterns of Climate Change Across Wisconsin From 1950 to 2006. Physical Geography, 2010, 31, 1-28.	1.4	80
25	Measuring short-term post-fire forest recovery across a burn severity gradient in a mixed pine-oak forest using multi-sensor remote sensing techniques. Remote Sensing of Environment, 2018, 210, 282-296.	11.0	76
26	A best-practice guide to predicting plant traits from leaf-level hyperspectral data using partial least squares regression. Journal of Experimental Botany, 2021, 72, 6175-6189.	4.8	74
27	Spectroscopy can predict key leaf traits associated with sourceâ€“sink balance and carbonâ€“nitrogen status. Journal of Experimental Botany, 2019, 70, 1789-1799.	4.8	72
28	Biological processes dominate seasonality of remotely sensed canopy greenness in an Amazon evergreen forest. New Phytologist, 2018, 217, 1507-1520.	7.3	66
29	Leaf area density from airborne LiDAR: Comparing sensors and resolutions in a temperate broadleaf forest ecosystem. Forest Ecology and Management, 2019, 433, 364-375.	3.2	64
30	Quantifying the influences of spectral resolution on uncertainty in leaf trait estimates through a Bayesian approach to RTM inversion. Remote Sensing of Environment, 2016, 183, 226-238.	11.0	60
31	The response of stomatal conductance to seasonal drought in tropical forests. Global Change Biology, 2020, 26, 823-839.	9.5	60
32	Terrestrial biosphere models underestimate photosynthetic capacity and CO₂ assimilation in the Arctic. New Phytologist, 2017, 216, 1090-1103.	7.3	59
33	Mapping canopy defoliation by herbivorous insects at the individual tree level using bi-temporal airborne imaging spectroscopy and LiDAR measurements. Remote Sensing of Environment, 2018, 215, 170-183.	11.0	58
34	Leaf reflectance spectroscopy captures variation in carboxylation capacity across species, canopy environment and leaf age in lowland moist tropical forests. New Phytologist, 2019, 224, 663-674.	7.3	55
35	Enhancing global change experiments through integration of remoteâ€sensing techniques. Frontiers in Ecology and the Environment, 2019, 17, 215-224.	4.0	55
36	Plot-level rapid screening for photosynthetic parameters using proximal hyperspectral imaging. Journal of Experimental Botany, 2020, 71, 2312-2328.	4.8	54

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37	Spatiotemporal Mapping of Temperature and Precipitation for the Development of a Multidecadal Climatic Dataset for Wisconsin. Journal of Applied Meteorology and Climatology, 2009, 48, 742-757.	1.5	53
38	Disentangling the contribution of biological and physical properties of leaves and canopies in imaging spectroscopy data. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E1074.	7.1	53
39	Beyond ecosystem modeling: A roadmap to community cyberinfrastructure for ecological dataâ€model integration. Global Change Biology, 2021, 27, 13-26.	9.5	44
40	Spectroscopic sensitivity of realâ€time, rapidly induced phytochemical change in response to damage. New Phytologist, 2013, 198, 311-319.	7.3	43
41	Investigating the Utility of Wavelet Transforms for Inverting a 3-D Radiative Transfer Model Using Hyperspectral Data to Retrieve Forest LAI. Remote Sensing, 2013, 5, 2639-2659.	4.0	39
42	An LUT-Based Inversion of DART Model to Estimate Forest LAI from Hyperspectral Data. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2015, 8, 3147-3160.	4.9	38
43	Elevated temperature and periodic water stress alter growth and quality of common milkweed (Asclepias syriaca) and monarch (Danaus plexippus) larval performance. Arthropod-Plant Interactions, 2015, 9, 149-161.	1.1	37
44	Fire-induced changes in green-up and leaf maturity of the Canadian boreal forest. Remote Sensing of Environment, 2008, 112, 3594-3603.	11.0	33
45	The phenology of leaf quality and its withinâ€canopy variation is essential for accurate modeling of photosynthesis in tropical evergreen forests. Global Change Biology, 2017, 23, 4814-4827.	9.5	33
46	Using imaging spectroscopy to detect variation in terrestrial ecosystem productivity across a waterâ€stressed landscape. Ecological Applications, 2018, 28, 1313-1324.	3.8	32
47	Identification of key parameters controlling demographically structured vegetation dynamics in a land surface model: CLM4.5(FATES). Geoscientific Model Development, 2019, 12, 4133-4164.	3.6	32
48	Homoeostatic maintenance of nonstructural carbohydrates during the 2015â€“2016 El NiÃ±o drought across a tropical forest precipitation gradient. Plant, Cell and Environment, 2019, 42, 1705-1714.	5.7	29
49	Leaf traits and canopy structure together explain canopy functional diversity: an airborne remote sensing approach. Ecological Applications, 2021, 31, e02230.	3.8	26
50	Scaling Functional Traits from Leaves to Canopies. , 2020, , 43-82.		25
51	Detection of relative differences in phenology of forest species using Landsat and MODIS. Landscape Ecology, 2012, 27, 529-543.	4.2	24
52	A Multi-Sensor Unoccupied Aerial System Improves Characterization of Vegetation Composition and Canopy Properties in the Arctic Tundra. Remote Sensing, 2020, 12, 2638.	4.0	24
53	Canopy dynamics and phenology of a boreal black spruce wildfire chronosequence. Agricultural and Forest Meteorology, 2009, 149, 187-204.	4.8	23
54	Detection of the metabolic response to drought stress using hyperspectral reflectance. Journal of Experimental Botany, 2021, 72, 6474-6489.	4.8	23

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55	Multiâ€hypothesis comparison of Farquhar and Collatz photosynthesis models reveals the unexpected influence of empirical assumptions at leaf and global scales. Global Change Biology, 2021, 27, 804-822.	9.5	22
56	A reporting format for leaf-level gas exchange data and metadata. Ecological Informatics, 2021, 61, 101232.	5.2	22
57	What Limits Predictive Certainty of Longâ€Term Carbon Uptake?. Journal of Geophysical Research G: Biogeosciences, 2018, 123, 3570-3588.	3.0	21
58	The â€œoneâ€point methodâ€•for estimating maximum carboxylation capacity of photosynthesis: A cautionary tale. Plant, Cell and Environment, 2019, 42, 2472-2481.	5.7	21
59	One Stomatal Model to Rule Them All? Toward Improved Representation of Carbon and Water Exchange in Global Models. Journal of Advances in Modeling Earth Systems, 2022, 14, .	3.8	20
60	Spectroscopy outperforms leaf trait relationships for predicting photosynthetic capacity across different forest types. New Phytologist, 2021, 232, 134-147.	7.3	19
61	Seasonal trends in photosynthesis and leaf traits in scarlet oak. Tree Physiology, 2021, 41, 1413-1424.	3.1	17
62	Relationship of a Landsat cumulative disturbance index to canopy nitrogen and forest structure. Remote Sensing of Environment, 2012, 118, 40-49.	11.0	16
63	Cutting out the middleman: calibrating and validating a dynamic vegetation model (ED2-PROSPECT5) using remotely sensed surface reflectance. Geoscientific Model Development, 2021, 14, 2603-2633.	3.6	16
64	Source:sink imbalance detected with leafâ€•and canopyâ€level spectroscopy in a fieldâ€grown crop. Plant, Cell and Environment, 2021, 44, 2466-2479.	5.7	15
65	Monitoring leaf phenology in moist tropical forests by applying a superpixel-based deep learning method to time-series images of tree canopies. ISPRS Journal of Photogrammetry and Remote Sensing, 2022, 183, 19-33.	11.1	15
66	Terrestrial biosphere models may overestimate Arctic <scp>CO</scp>₂ assimilation if they do not account for decreased quantum yield and convexity at low temperature. New Phytologist, 2019, 223, 167-179.	7.3	14
67	Remote Sensing of Tundra Ecosystems Using High Spectral Resolution Reflectance: Opportunities and Challenges. Journal of Geophysical Research G: Biogeosciences, 2022, 127, .	3.0	14
68	Designing an Observing System to Study the Surface Biology and Geology (SBG) of the Earth in the 2020s. Journal of Geophysical Research G: Biogeosciences, 2023, 128, .	3.0	14
69	Evidence for Compensatory Photosynthetic and Yield Response of Soybeans to Aphid Herbivory. Journal of Economic Entomology, 2016, 109, 1177-1187.	1.8	13
70	The multi-assumption architecture and testbed (MAAT v1.0): R code for generating ensembles with dynamic model structure and analysis of epistemic uncertainty from multiple sources. Geoscientific Model Development, 2018, 11, 3159-3185.	3.6	13
71	The influence of canopy radiation parameter uncertainty on model projections of terrestrial carbon and energy cycling. PLoS ONE, 2019, 14, e0216512.	2.5	13
72	Triose phosphate utilization limitation: an unnecessary complexity in terrestrial biosphere model representation of photosynthesis. New Phytologist, 2021, 230, 17-22.	7.3	11

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73	Towards mapping biodiversity from above: Can fusing lidar and hyperspectral remote sensing predict taxonomic, functional, and phylogenetic tree diversity in temperate forests?. Global Ecology and Biogeography, 2022, 31, 1440-1460.	5.8	10
74	The NASA Carbon Monitoring System Phase 2 synthesis: scope, findings, gaps and recommended next steps. Environmental Research Letters, 2022, 17, 063010.	5.2	10
75	Utility of the Wavelet Transform for LAI Estimation Using Hyperspectral Data. Photogrammetric Engineering and Remote Sensing, 2013, 79, 653-662.	0.6	9
76	Data synergy between leaf area index and clumping index Earth Observation products using photon recollision probability theory. Remote Sensing of Environment, 2018, 215, 1-6.	11.0	9
77	Landscape-scale characterization of Arctic tundra vegetation composition, structure, and function with a multi-sensor unoccupied aerial system. Environmental Research Letters, 2021, 16, 085005.	5.2	9
78	An improved representation of the relationship between photosynthesis and stomatal conductance leads to more stable estimation of conductance parameters and improves the goodnessâ€ofâ€fit across diverse data sets. Global Change Biology, 2022, 28, 3537-3556.	9.5	9
79	Rapid estimation of photosynthetic leaf traits of tropical plants in diverse environmental conditions using reflectance spectroscopy. PLoS ONE, 2021, 16, e0258791.	2.5	8
80	Late-day measurement of excised branches results in uncertainty in the estimation of two stomatal parameters derived from response curves inPopulus deltoidesBartr.ÂÃ—ÂPopulus nigraL.. Tree Physiology, 2022, 42, 1377-1395.	3.1	8
81	High-throughput characterization, correlation, and mapping of leaf photosynthetic and functional traits in the soybean (Glycine max) nested association mapping population. Genetics, 2022, , .	2.9	8
82	Use of insect exclusion cages in soybean creates an altered microclimate and differential crop response. Agricultural and Forest Meteorology, 2015, 208, 50-61.	4.8	7
83	Hydraulic architecture explains species moisture dependency but not mortality rates across a tropical rainfall gradient. Biotropica, 2021, 53, 1213-1225.	1.6	6
84	A New Approach to Evaluate and Reduce Uncertainty of Model-Based Biodiversity Projections for Conservation Policy Formulation. BioScience, 2021, 71, 1261-1273.	4.9	6
85	Reducing model uncertainty of climate change impacts on high latitude carbon assimilation. Global Change Biology, 2022, 28, 1222-1247.	9.5	6
86	Development of an open-source regional data assimilation system in PEcAn v. 1.7.2: application to carbon cycle reanalysis across the contiguous US using SIPNET. Geoscientific Model Development, 2022, 15, 3233-3252.	3.6	6
87	Implementation and evaluation of the unified stomatal optimization approach in the Functionally Assembled Terrestrial Ecosystem Simulator (FATES). Geoscientific Model Development, 2022, 15, 4313-4329.	3.6	5
88	Spectral Fidelity of Earth's Terrestrial and Aquatic Ecosystems. Journal of Geophysical Research G: Biogeosciences, 2021, 126, e2021JG006273.	3.0	4
89	New calculations for photosynthesis measurement systems: what's the impact for physiologists and modelers?. New Phytologist, 2022, 233, 592-598.	7.3	4
90	A zero-power warming chamber for investigating plant responses to rising temperature. Biogeosciences, 2017, 14, 4071-4083.	3.3	3

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91	Assessing dynamic vegetation model parameter uncertainty across Alaskan arctic tundra plant communities. Ecological Applications, 2022, 32, e02499.	3.8	3
92	A UAS Platform for Assessing Spectral, Structural, and Thermal Patterns of Arctic Tundra Vegetation. , 2019, , .		2
93	NASA's Surface Biology and Geology Concept Study: Status and Next Steps. , 2020, , .		2
94	Application of Photon Recollision Probability Theory for Compatibility Check Between Foliage Clumping and Leaf Area Index Products Obtained from Earth Observation Data. , 2018, , .		0
95	Assessing Post-Fire Tree Mortality and Biomass Change by Integrating Lidar and Hyperspectral data. , 2019, , .		0
96	Toward comprehensive uncertainty predictions for remote imaging spectroscopy. , 2020, , .		0