Shawn Paul Serbin

List of Publications by Year
in descending order

96 papers	5,693 citations	76326 40 h-index	82547 72 g-index
118 all docs	118 docs citations	118 times ranked	7089 citing authors

#	ARTICLE	IF	CITATIONS
1	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
2	Reducing model uncertainty of climate change impacts on high latitude carbon assimilation. Global Change Biology, 2022, 28, 1222-1247.	9.5	6
3	New calculations for photosynthesis measurement systems: what's the impact for physiologists and modelers?. New Phytologist, 2022, 233, 592-598.	7.3	4
4	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
5	Assessing dynamic vegetation model parameter uncertainty across Alaskan arctic tundra plant communities. Ecological Applications, 2022, 32, e02499.	3.8	3
6	Late-day measurement of excised branches results in uncertainty in the estimation of two stomatal parameters derived from response curves in<i>Populus deltoides</i>Bartr.ÂÃ—Â<i>Populus nigra</i>L.. Tree Physiology, 2022, 42, 1377-1395.	3.1	8
7	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
8	Remote Sensing of Tundra Ecosystems Using High Spectral Resolution Reflectance: Opportunities and Challenges. Journal of Geophysical Research G: Biogeosciences, 2022, 127, .	3.0	14
9	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
10	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
11	High-throughput characterization, correlation, and mapping of leaf photosynthetic and functional traits in the soybean (<i>Glycine max</i>) nested association mapping population. Genetics, 2022, , .	2.9	8
12	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
13	The NASA Carbon Monitoring System Phase 2 synthesis: scope, findings, gaps and recommended next steps. Environmental Research Letters, 2022, 17, 063010.	5.2	10
14	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
15	Leaf traits and canopy structure together explain canopy functional diversity: an airborne remote sensing approach. Ecological Applications, 2021, 31, e02230.	3.8	26
16	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
17	Beyond ecosystem modeling: A roadmap to community cyberinfrastructure for ecological dataâ€model integration. Global Change Biology, 2021, 27, 13-26.	9.5	44
18	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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19	Seasonal trends in photosynthesis and leaf traits in scarlet oak. Tree Physiology, 2021, 41, 1413-1424.	3.1	17
20	A reporting format for leaf-level gas exchange data and metadata. Ecological Informatics, 2021, 61, 101232.	5.2	22
21	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
22	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
23	NASA's surface biology and geology designated observable: A perspective on surface imaging algorithms. Remote Sensing of Environment, 2021, 257, 112349.	11.0	148
24	Hydraulic architecture explains species moisture dependency but not mortality rates across a tropical rainfall gradient. Biotropica, 2021, 53, 1213-1225.	1.6	6
25	Detection of the metabolic response to drought stress using hyperspectral reflectance. Journal of Experimental Botany, 2021, 72, 6474-6489.	4.8	23
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	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
28	Spectroscopy outperforms leaf trait relationships for predicting photosynthetic capacity across different forest types. New Phytologist, 2021, 232, 134-147.	7.3	19
29	Spectral Fidelity of Earth's Terrestrial and Aquatic Ecosystems. Journal of Geophysical Research G: Biogeosciences, 2021, 126, e2021JG006273.	3.0	4
30	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
31	Rapid estimation of photosynthetic leaf traits of tropical plants in diverse environmental conditions using reflectance spectroscopy. PLoS ONE, 2021, 16, e0258791.	2.5	8
32	The response of stomatal conductance to seasonal drought in tropical forests. Global Change Biology, 2020, 26, 823-839.	9.5	60
33	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
34	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
35	Plot-level rapid screening for photosynthetic parameters using proximal hyperspectral imaging. Journal of Experimental Botany, 2020, 71, 2312-2328.	4.8	54
36	Scaling Functional Traits from Leaves to Canopies. , 2020, , 43-82.		25

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37	Toward comprehensive uncertainty predictions for remote imaging spectroscopy. , 2020, , .		0
38	NASA's Surface Biology and Geology Concept Study: Status and Next Steps. , 2020, , .		2
39	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
40	The influence of canopy radiation parameter uncertainty on model projections of terrestrial carbon and energy cycling. PLoS ONE, 2019, 14, e0216512.	2.5	13
41	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
42	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
43	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
44	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
45	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
46	Enhancing global change experiments through integration of remoteâ€sensing techniques. Frontiers in Ecology and the Environment, 2019, 17, 215-224.	4.0	55
47	Assessing Post-Fire Tree Mortality and Biomass Change by Integrating Lidar and Hyperspectral data. , 2019, , .		0
48	A UAS Platform for Assessing Spectral, Structural, and Thermal Patterns of Arctic Tundra Vegetation. , 2019, , .		2
49	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
50	Global photosynthetic capacity is optimized to the environment. Ecology Letters, 2019, 22, 506-517.	6.4	153
51	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
52	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
53	Biological processes dominate seasonality of remotely sensed canopy greenness in an Amazon evergreen forest. New Phytologist, 2018, 217, 1507-1520.	7.3	66
54	Hyperspectral reflectance as a tool to measure biochemical and physiological traits in wheat. Journal of Experimental Botany, 2018, 69, 483-496.	4.8	190

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55	Using imaging spectroscopy to detect variation in terrestrial ecosystem productivity across a waterâ€stressed landscape. Ecological Applications, 2018, 28, 1313-1324.	3.8	32
56	Vegetation demographics in Earth System Models: A review of progress and priorities. Global Change Biology, 2018, 24, 35-54.	9.5	478
57	Application of Photon Recollision Probability Theory for Compatibility Check Between Foliage Clumping and Leaf Area Index Products Obtained from Earth Observation Data. , 2018, , .		0
58	What Limits Predictive Certainty of Longâ€Term Carbon Uptake?. Journal of Geophysical Research G: Biogeosciences, 2018, 123, 3570-3588.	3.0	21
59	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
60	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
61	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
62	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
63	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
64	A roadmap for improving the representation of photosynthesis in Earth system models. New Phytologist, 2017, 213, 22-42.	7.3	365
65	ISS observations offer insights into plant function. Nature Ecology and Evolution, 2017, 1, 194.	7.8	94
66	Terrestrial biosphere models underestimate photosynthetic capacity and CO₂ assimilation in the Arctic. New Phytologist, 2017, 216, 1090-1103.	7.3	59
67	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
68	A zero-power warming chamber for investigating plant responses to rising temperature. Biogeosciences, 2017, 14, 4071-4083.	3.3	3
69	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
70	Spectroscopic determination of ecologically relevant plant secondary metabolites. Methods in Ecology and Evolution, 2016, 7, 1402-1412.	5.2	88
71	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
72	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

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73	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
74	Evidence for Compensatory Photosynthetic and Yield Response of Soybeans to Aphid Herbivory. Journal of Economic Entomology, 2016, 109, 1177-1187.	1.8	13
75	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
76	Imaging spectroscopy algorithms for mapping canopy foliar chemical and morphological traits and their uncertainties. Ecological Applications, 2015, 25, 2180-2197.	3.8	195
77	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
78	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
79	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
80	Using leaf optical properties to detect ozone effects on foliar biochemistry. Photosynthesis Research, 2014, 119, 65-76.	2.9	121
81	Spectroscopic determination of leaf morphological and biochemical traits for northern temperate and boreal tree species. Ecological Applications, 2014, 24, 1651-1669.	3.8	273
82	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
83	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
84	Modelling <scp>C</scp>₃ photosynthesis from the chloroplast to the ecosystem. Plant, Cell and Environment, 2013, 36, 1641-1657.	5.7	145
85	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
86	Spectroscopic sensitivity of realâ€time, rapidly induced phytochemical change in response to damage. New Phytologist, 2013, 198, 311-319.	7.3	43
87	Utility of the Wavelet Transform for LAI Estimation Using Hyperspectral Data. Photogrammetric Engineering and Remote Sensing, 2013, 79, 653-662.	0.6	9
88	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
89	Leaf optical properties reflect variation in photosynthetic metabolism and its sensitivity to temperature. Journal of Experimental Botany, 2012, 63, 489-502.	4.8	240
90	Relationship of a Landsat cumulative disturbance index to canopy nitrogen and forest structure. Remote Sensing of Environment, 2012, 118, 40-49.	11.0	16

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91	Detection of relative differences in phenology of forest species using Landsat and MODIS. Landscape Ecology, 2012, 27, 529-543.	4.2	24
92	Patterns of Climate Change Across Wisconsin From 1950 to 2006. Physical Geography, 2010, 31, 1-28.	1.4	80
93	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
94	Canopy dynamics and phenology of a boreal black spruce wildfire chronosequence. Agricultural and Forest Meteorology, 2009, 149, 187-204.	4.8	23
95	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
96	Impacts of recent climate change on Wisconsin corn and soybean yield trends. Environmental Research Letters, 2008, 3, 034003.	5.2	189