Mathias Disney

List of Publications by Year
in descending order

112 papers	9,013 citations	61984 43 h-index	42399 92 g-index
126 all docs	126 docs citations	126 times ranked	8259 citing authors

#	Article	IF	Citations
1	First operational BRDF, albedo nadir reflectance products from MODIS. Remote Sensing of Environment, 2002, 83, 135-148.	11.0	2,022
2	Fast Automatic Precision Tree Models from Terrestrial Laser Scanner Data. Remote Sensing, 2013, 5, 491-520.	4.0	528
3	Nondestructive estimates of aboveâ€ground biomass using terrestrial laser scanning. Methods in Ecology and Evolution, 2015, 6, 198-208.	5.2	449
4	Hyperspectral remote sensing of foliar nitrogen content. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E185-92.	7.1	389
5	Data acquisition considerations for Terrestrial Laser Scanning of forest plots. Remote Sensing of Environment, 2017, 196, 140-153.	11.0	229
6	SimpleTree â€"An Efficient Open Source Tool to Build Tree Models from TLS Clouds. Forests, 2015, 6, 4245-4294.	2.1	226
7	Can we measure terrestrial photosynthesis from space directly, using spectral reflectance and fluorescence?. Global Change Biology, 2007, 13, 1484-1497.	9.5	224
8	Terrestrial laser scanning in forest ecology: Expanding the horizon. Remote Sensing of Environment, 2020, 251, 112102.	11.0	208
9	Third Radiation Transfer Model Intercomparison (RAMI) exercise: Documenting progress in canopy reflectance models. Journal of Geophysical Research, 2007, 112, .	3.3	193
10	Terrestrial Laser Scanning for Plot-Scale Forest Measurement. Current Forestry Reports, 2015, 1, 239-251.	7.4	176
11	The fourth phase of the radiative transfer model intercomparison (RAMI) exercise: Actual canopy scenarios and conformity testing. Remote Sensing of Environment, 2015, 169, 418-437.	11.0	170
12	Estimation of aboveâ€ground biomass of large tropical trees with terrestrial LiDAR. Methods in Ecology and Evolution, 2018, 9, 223-234.	5.2	166
13	3D modelling of forest canopy structure for remote sensing simulations in the optical and microwave domains. Remote Sensing of Environment, 2006, 100, 114-132.	11.0	144
14	Highly Accurate Tree Models Derived from Terrestrial Laser Scan Data: A Method Description. Forests, 2014, 5, 1069-1105.	2.1	137
15	Radiation Transfer Model Intercomparison (RAMI) exercise: Results from the second phase. Journal of Geophysical Research, 2004, 109, n/a-n/a.	3.3	131
16	Canopy spectral invariants for remote sensing and model applications. Remote Sensing of Environment, 2007, 106, 106-122.	11.0	129
17	Spectral invariants and scattering across multiple scales from within-leaf to canopy. Remote Sensing of Environment, 2007, 109, 196-206.	11.0	124
18	Assimilating canopy reflectance data into an ecosystem model with an Ensemble Kalman Filter. Remote Sensing of Environment, 2008, 112, 1347-1364.	11.0	123

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19	Weighing trees with lasers: advances, challenges and opportunities. Interface Focus, 2018, 8, 20170048.	3.0	120
20	Extracting individual trees from lidar point clouds using treeseg. Methods in Ecology and Evolution, 2019, 10, 438-445.	5.2	113
21	The Importance of Consistent Global Forest Aboveground Biomass Product Validation. Surveys in Geophysics, 2019, 40, 979-999.	4.6	106
22	Direct retrieval of canopy gap probability using airborne waveform lidar. Remote Sensing of Environment, 2013, 134, 24-38.	11.0	102
23	The fourth radiation transfer model intercomparison (RAMIâ€IV): Proficiency testing of canopy reflectance models with ISOâ€13528. Journal of Geophysical Research D: Atmospheres, 2013, 118, 6869-6890.	3.3	102
24	Developing a dual-wavelength full-waveform terrestrial laser scanner to characterize forest canopy structure. Agricultural and Forest Meteorology, 2014, 198-199, 7-14.	4.8	100
25	Leaf and wood classification framework for terrestrial LiDAR point clouds. Methods in Ecology and Evolution, 2019, 10, 680-694.	5.2	98
26	Terrestrial Li<scp>DAR</scp>: a threeâ€dimensional revolution in how we look at trees. New Phytologist, 2019, 222, 1736-1741.	7.3	95
27	Realistic Forest Stand Reconstruction from Terrestrial LiDAR for Radiative Transfer Modelling. Remote Sensing, 2018, 10, 933.	4.0	94
28	Terrestrial ecosystems from space: a review of earth observation products for macroecology applications. Global Ecology and Biogeography, 2012, 21, 603-624.	5.8	91
29	Ground Data are Essential for Biomass Remote Sensing Missions. Surveys in Geophysics, 2019, 40, 863-880.	4.6	91
30	The RAMI On-line Model Checker (ROMC): A web-based benchmarking facility for canopy reflectance models. Remote Sensing of Environment, 2008, 112, 1144-1150.	11.0	85
31	Measurement of fine-spatial-resolution 3D vegetation structure with airborne waveform lidar: Calibration and validation with voxelised terrestrial lidar. Remote Sensing of Environment, 2017, 188, 37-50.	11.0	82
32	Efficient Emulation of Radiative Transfer Codes Using Gaussian Processes and Application to Land Surface Parameter Inferences. Remote Sensing, 2016, 8, 119.	4.0	76
33	New perspectives on the ecology of tree structure and tree communities through terrestrial laser scanning. Interface Focus, 2018, 8, 20170052.	3.0	76
34	Strong constraint on modelled global carbon uptake using solar-induced chlorophyll fluorescence data. Scientific Reports, 2018, 8, 1973.	3.3	69
35	Impact of land cover uncertainties on estimates of biospheric carbon fluxes. Global Biogeochemical Cycles, 2008, 22, .	4.9	68
36	Waveform lidar over vegetation: An evaluation of inversion methods for estimating return energy. Remote Sensing of Environment, 2015, 164, 208-224.	11.0	60

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37	Estimating urban above ground biomass with multi-scale LiDAR. Carbon Balance and Management, 2018, 13, 10.	3.2	60
38	Variability and bias in active and passive ground-based measurements of effective plant, wood and leaf area index. Agricultural and Forest Meteorology, 2018, 252, 231-240.	4.8	55
39	New estimates of leaf angle distribution from terrestrial LiDAR: Comparison with measured and modelled estimates from nine broadleaf tree species. Agricultural and Forest Meteorology, 2019, 264, 322-333.	4.8	55
40	Finite element analysis of trees in the wind based on terrestrial laser scanning data. Agricultural and Forest Meteorology, 2019, 265, 137-144.	4.8	54
41	Measuring forests with dual wavelength lidar: A simulation study over topography. Agricultural and Forest Meteorology, 2012, 161, 123-133.	4.8	50
42	Evaluation of the Range Accuracy and the Radiometric Calibration of Multiple Terrestrial Laser Scanning Instruments for Data Interoperability. IEEE Transactions on Geoscience and Remote Sensing, 2017, 55, 2716-2724.	6.3	50
43	Time for a Plant Structural Economics Spectrum. Frontiers in Forests and Global Change, 2019, 2, .	2.3	47
44	African Savanna-Forest Boundary Dynamics: A 20-Year Study. PLoS ONE, 2016, 11, e0156934.	2.5	44
45	Is waveform worth it? A comparison of Li<scp>DAR</scp> approaches for vegetation and landscape characterization. Remote Sensing in Ecology and Conservation, 2016, 2, 5-15.	4.3	43
46	Quantifying the impact of woody material on leaf area index estimation from hemispherical photography using 3D canopy simulations. Agricultural and Forest Meteorology, 2016, 226-227, 1-12.	4.8	42
47	Leaf area index for biomes of the Eastern Arc Mountains: Landsat and SPOT observations along precipitation and altitude gradients. Remote Sensing of Environment, 2012, 118, 103-115.	11.0	41
48	Tree species classification using structural features derived from terrestrial laser scanning. ISPRS Journal of Photogrammetry and Remote Sensing, 2020, 168, 170-181.	11.1	41
49	The World's Tallest Tropical Tree in Three Dimensions. Frontiers in Forests and Global Change, 2019, 2, .	2.3	38
50	Innovations in Ground and Airborne Technologies as Reference and for Training and Validation: Terrestrial Laser Scanning (TLS). Surveys in Geophysics, 2019, 40, 937-958.	4.6	38
51	Quantifying tropical forest structure through terrestrial and UAV laser scanning fusion in Australian rainforests. Remote Sensing of Environment, 2022, 271, 112912.	11.0	38
52	An improved theoretical model of canopy gap probability for Leaf Area Index estimation in woody ecosystems. Forest Ecology and Management, 2015, 358, 303-320.	3.2	37
53	3D Imaging Insights into Forests and Coral Reefs. Trends in Ecology and Evolution, 2020, 35, 6-9.	8.7	36
54	Assessment of Bias in Pan-Tropical Biomass Predictions. Frontiers in Forests and Global Change, 2020, 3, .	2.3	36

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55	Investigating assumptions of crown archetypes for modelling LiDAR returns. Remote Sensing of Environment, 2013, 134, 39-49.	11.0	35
56	Upscaling as ecological information transfer: a simple framework with application to Arctic ecosystem carbon exchange. Landscape Ecology, 2009, 24, 971-986.	4.2	34
57	A New Global fAPAR and LAI Dataset Derived from Optimal Albedo Estimates: Comparison with MODIS Products. Remote Sensing, 2016, 8, 275.	4.0	34
58	Non-intersecting leaf insertion algorithm for tree structure models. Interface Focus, 2018, 8, 20170045.	3.0	34
59	Quantifying Surface Reflectivity for Spaceborne Lidar via Two Independent Methods. IEEE Transactions on Geoscience and Remote Sensing, 2009, 47, 3262-3271.	6.3	33
60	A threshold insensitive method for locating the forest canopy top with waveform lidar. Remote Sensing of Environment, 2011, 115, 3286-3297.	11.0	33
61	An architectural understanding of natural sway frequencies in trees. Journal of the Royal Society Interface, 2019, 16, 20190116.	3.4	32
62	Quantifying urban forest structure with open-access remote sensing data sets. Urban Forestry and Urban Greening, 2020, 50, 126653.	5.3	31
63	Estimating forest aboveâ€ground biomass with terrestrial laser scanning: Current status and future directions. Methods in Ecology and Evolution, 2022, 13, 1628-1639.	5.2	31
64	Tree height in tropical forest as measured by different ground, proximal, and remote sensing instruments, and impacts on above ground biomass estimates. International Journal of Applied Earth Observation and Geoinformation, 2019, 82, 101899.	2.8	30
65	Comparison of MODIS broadband albedo over an agricultural site with ground measurements and values derived from Earth observation data at a range of spatial scales. International Journal of Remote Sensing, 2004, 25, 5297-5317.	2.9	29
66	Amazon tree dominance across forest strata. Nature Ecology and Evolution, 2021, 5, 757-767.	7.8	27
67	Sensitivity of direct canopy gap fraction retrieval from airborne waveform lidar to topography and survey characteristics. Remote Sensing of Environment, 2014, 143, 15-25.	11.0	24
68	Quantifying landscapeâ€level methane fluxes in subarctic Finland using a multiscale approach. Global Change Biology, 2015, 21, 3712-3725.	9.5	23
69	Upscaling Tundra CO₂ Exchange from Chamber to Eddy Covariance Tower. Arctic, Antarctic, and Alpine Research, 2013, 45, 275-284.	1.1	22
70	New 3D measurements of large redwood trees for biomass and structure. Scientific Reports, 2020, 10, 16721.	3.3	22
71	Influence of levelling technique on the retrieval of canopy structural parameters from digital hemispherical photography. Agricultural and Forest Meteorology, 2017, 237-238, 143-149.	4.8	21
72	New insights into large tropical tree mass and structure from direct harvest and terrestrial lidar. Royal Society Open Science, 2021, 8, 201458.	2.4	21

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73	Remote Sensing in Ecology and Conservation: three years on. Remote Sensing in Ecology and Conservation, 2017, 3, 53-56.	4.3	20
74	A New Architectural Perspective on Wind Damage in a Natural Forest. Frontiers in Forests and Global Change, 2019, 1, .	2.3	20
75	The mechanical stability of the worldâ€™s tallest broadleaf trees. Biotropica, 2021, 53, 110-120.	1.6	20
76	Old growth Afrotropical forests critical for maintaining forest carbon. Global Ecology and Biogeography, 2020, 29, 1785-1798.	5.8	19
77	Carbon storage in peatlands: A case study on the Isle of Man. Geoderma, 2013, 204-205, 111-119.	5.1	18
78	Validating canopy clumping retrieval methods using hemispherical photography in a simulated Eucalypt forest. Agricultural and Forest Meteorology, 2017, 247, 181-193.	4.8	16
79	Canopy wetness in the Eastern Amazon. Agricultural and Forest Meteorology, 2021, 297, 108250.	4.8	15
80	The terrestrial laser scanning revolution in forest ecology. Interface Focus, 2018, 8, 20180001.	3.0	13
81	Plant Structure-Function Relationships and Woody Tissue Respiration: Upscaling to Forests from Laser-Derived Measurements. Advances in Photosynthesis and Respiration, 2017, , 89-105.	1.0	12
82	Theoretical uncertainties for global satellite-derived burned area estimates. Biogeosciences, 2019, 16, 3147-3164.	3.3	12
83	Transpiration from subarctic deciduous woodlands: Environmental controls and contribution to ecosystem evapotranspiration. Ecohydrology, 2020, 13, e2190.	2.4	12
84	To What Extent Can UAV Photogrammetry Replicate UAV LiDAR to Determine Forest Structure? A Test in Two Contrasting Tropical Forests. Journal of Geophysical Research G: Biogeosciences, 2021, 126, .	3.0	11
85	Detecting Human Presence and Influence on Neotropical Forests with Remote Sensing. Remote Sensing, 2018, 10, 1593.	4.0	10
86	Terrestrial laser scanning to reconstruct branch architecture from harvested branches. Methods in Ecology and Evolution, 2021, 12, 2487-2500.	5.2	10
87	FLuorescence EXplorer (FLEX): an optimised payload to map vegetation photosynthesis from space. , 2006, , .		9
88	Remote Sensing of Vegetation: Potentials, Limitations, Developments and Applications. Advances in Photosynthesis and Respiration, 2016, , 289-331.	1.0	8
89	Decoupling Canopy Structure and Leaf Biochemistry: Testing the Utility of Directional Area Scattering Factor (DASF). Remote Sensing, 2018, 10, 1911.	4.0	7
90	Performance of Laser-Based Electronic Devices for Structural Analysis of Amazonian Terra-Firme Forests. Remote Sensing, 2019, 11, 510.	4.0	7

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91	Comparing Remote Sensing and Field-Based Approaches to Estimate Ladder Fuels and Predict Wildfire Burn Severity. Frontiers in Forests and Global Change, 2022, 5, .	2.3	7
92	Large-area virtual forests from terrestrial laser scanning data. , 2016, , .		6
93	An Effective Method for InSAR Mapping of Tropical Forest Degradation in Hilly Areas. Remote Sensing, 2022, 14, 452.	4.0	5
94	Remote sensing and the UN Ocean Decade: high expectations, big opportunities. Remote Sensing in Ecology and Conservation, 2022, 8, 267-271.	4.3	4
95	How can we know what we donâ€™t know? A Commentary on: Sampling forests with terrestrial laser scanning. Annals of Botany, 2021, 128, 685-688.	2.9	3
96	Modelling the radiometric response of a dynamic, 3D structural model of wheat in the optical and microwave domains. , 0, , .		2
97	Simulating arbitrary hyperspectral bandsets from multispectral observations via a generic Earth Observation-Land Data Assimilation System (EO-LDAS). Advances in Space Research, 2018, 62, 1654-1674.	2.6	2
98	Quantifying Tropical Forest Stand Structure Through Terrestrial and UAV Laser Scanning Fusion. , 2021, , .		2
99	Using terrestrial laser scanning to constrain forest ecosystem structure and functions in the Ecosystem Demography model (ED2.2). Geoscientific Model Development, 2022, 15, 4783-4803.	3.6	2
100	Implications of 3D Forest Stand Reconstruction Methods for Radiative Transfer Modeling: A Case Study in the Temperate Deciduous Forest. Journal of Geophysical Research D: Atmospheres, 2022, 127, .	3.3	2
101	Vegetation Structure (LiDAR). , 2018, , 104-116.		1
102	The Moderate Resolution Imaging Spectroradiometer (MODIS) BRDF and albedo product: preliminary results. , 0, , .		1
103	Inter-comparison of phenological measures derived from coarse resolution earth observation and implications for assimilation into dynamic vegetation models. , 0, , .		0
104	Coupling a canopy reflectance model with a global vegetation model. , 0, , .		0
105	Extracting Tree Heights over Topography with Multi-Spectral Spaceborne Waveform Lidar. , 2008, , .		0
106	Using Remote Sensing Data to Quantify Changes in Vegetation over Peatland Areas. , 2008, , .		0
107	Estimating the Spatial Exchange of Carbon through the Assimilation of Earth Observation Derived Products using an Ensemble Kalman Filter. , 2008, , .		0
108	Satellite monitoring of disturbances in Arctic ecosystems. , 2009, , .		0

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109	Modelling the impact of wildfire on spectral reflectance. , 2009, , .		0
110	On canopy spectral invariants and hyperspectral ray tracing. , 2010, , .		0
111	Effects of clumping on modelling LiDAR waveforms in forest canopies. , 2012, , .		0
112	The impact of sensor characteristics for obtaining accurate ground-based measurements of LAI. , 2013, , .		0