Michel M Verstraete

List of Publications by Year
in descending order

123 papers	9,994 citations	36303 51 h-index	36028 97 g-index
138 all docs	138 docs citations	138 times ranked	8243 citing authors

#	Article	IF	Citations
1	Multi-angle Imaging SpectroRadiometer (MISR) instrument description and experiment overview. IEEE Transactions on Geoscience and Remote Sensing, 1998, 36, 1072-1087.	6.3	855
2	The Concept of Essential Climate Variables in Support of Climate Research, Applications, and Policy. Bulletin of the American Meteorological Society, 2014, 95, 1431-1443.	3.3	629
3	GEMI: a non-linear index to monitor global vegetation from satellites. Plant Ecology, 1992, 101, 15-20.	1.2	530
4	Techniques for the retrieval of aerosol properties over land and ocean using multiangle imaging. IEEE Transactions on Geoscience and Remote Sensing, 1998, 36, 1212-1227.	6.3	358
5	Coupled surfaceâ€atmosphere reflectance (CSAR) model: 2. Semiempirical surface model usable with NOAA advanced very high resolution radiometer data. Journal of Geophysical Research, 1993, 98, 20791-20801.	3.3	357
6	The structural and radiative consistency of three-dimensional tree reconstructions from terrestrial lidar. Remote Sensing of Environment, 2009, 113, 1067-1081.	11.0	247
7	Optical remote sensing of vegetation: Modeling, caveats, and algorithms. Remote Sensing of Environment, 1995, 51, 169-188.	11.0	230
8	Designing optimal spectral indexes for remote sensing applications. IEEE Transactions on Geoscience and Remote Sensing, 1996, 34, 1254-1265.	6.3	214
9	Raytran: a Monte Carlo ray-tracing model to compute light scattering in three-dimensional heterogeneous media. IEEE Transactions on Geoscience and Remote Sensing, 1998, 36, 493-505.	6.3	204
10	Estimating leaf area distribution in savanna trees from terrestrial LiDAR measurements. Agricultural and Forest Meteorology, 2011, 151, 1252-1266.	4.8	202
11	Potential and limitations of information extraction on the terrestrial biosphere from satellite remote sensing. Remote Sensing of Environment, 1996, 58, 201-214.	11.0	197
12	On seeing the wood from the leaves and the role of voxel size in determining leaf area distribution of forests with terrestrial LiDAR. Agricultural and Forest Meteorology, 2014, 184, 82-97.	4.8	196
13	Third Radiation Transfer Model Intercomparison (RAMI) exercise: Documenting progress in canopy reflectance models. Journal of Geophysical Research, 2007, 112, .	3.3	193
14	Advanced vegetation indices optimized for up-coming sensors: Design, performance, and applications. IEEE Transactions on Geoscience and Remote Sensing, 2000, 38, 2489-2505.	6.3	189
15	A physical model of the bidirectional reflectance of vegetation canopies: 1. Theory. Journal of Geophysical Research, 1990, 95, 11755-11765.	3.3	184
16	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
17	The MERIS Global Vegetation Index (MGVI): Description and preliminary application. International Journal of Remote Sensing, 1999, 20, 1917-1927.	2.9	161
18	Determination of land and ocean reflective, radiative, and biophysical properties using multiangle imaging. IEEE Transactions on Geoscience and Remote Sensing, 1998, 36, 1266-1281.	6.3	160

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19	A physical model for predicting bidirectional reflectances over bare soil. Remote Sensing of Environment, 1989, 27, 273-288.	11.0	153
20	A climate model-based review of drought in the Sahel: Desertification, the re-greening and climate change. Global and Planetary Change, 2008, 64, 119-128.	3.5	152
21	Three-dimensional radiation transfer modeling in a dicotyledon leaf. Applied Optics, 1996, 35, 6585.	2.1	146
22	Evaluation of fraction of absorbed photosynthetically active radiation products for different canopy radiation transfer regimes: Methodology and results using Joint Research Center products derived from SeaWiFS against ground-based estimations. Journal of Geophysical Research, 2006, 111, .	3.3	144
23	Radiation transfer model intercomparison (RAMI) exercise. Journal of Geophysical Research, 2001, 106, 11937-11956.	3.3	138
24	A semidiscrete model for the scattering of light by vegetation. Journal of Geophysical Research, 1997, 102, 9431-9446.	3.3	129
25	Surface albedo retrieval from Meteosat: 1. Theory. Journal of Geophysical Research, 2000, 105, 18099-18112.	3.3	128
26	Evaluation of the performance of various vegetation indices to retrieve vegetation cover from AVHRR data. International Journal of Remote Sensing, 1994, 10, 265-284.	1.0	124
27	Scientific concepts for an integrated analysis of desertification. Land Degradation and Development, 2011, 22, 166-183.	3.9	122
28	The representation of continental surface processes in atmospheric models. Reviews of Geophysics, 1990, 28, 35-52.	23.0	112
29	Uniqueness of multiangular measurements. I. An indicator of subpixel surface heterogeneity from MISR. IEEE Transactions on Geoscience and Remote Sensing, 2002, 40, 1560-1573.	6.3	110
30	Coupled surfaceâ€atmosphere reflectance (CSAR) model: 1. Model description and inversion on synthetic data. Journal of Geophysical Research, 1993, 98, 20779-20789.	3.3	107
31	Canopy Structure Parameters Derived from Multi-Angular Remote Sensing Data for Terrestrial Carbon Studies. Climatic Change, 2004, 67, 403-415.	3.6	107
32	Simplifying the interaction of land surfaces with radiation for relating remote sensing products to climate models. Journal of Geophysical Research, 2006, 111, .	3.3	106
33	Evaluation of the MERIS/ENVISAT FAPAR product. Advances in Space Research, 2007, 39, 105-115.	2.6	105
34	Theoretical limits to the estimation of the leaf area index on the basis of visible and near-infrared remote sensing data. IEEE Transactions on Geoscience and Remote Sensing, 1997, 35, 1438-1445.	6.3	104
35	A physical model of the bidirectional reflectance of vegetation canopies: 2. Inversion and validation. Journal of Geophysical Research, 1990, 95, 11767-11775.	3.3	94
36	Designing optimal spectral indices: A feasibility and proof of concept study. International Journal of Remote Sensing, 1999, 20, 1853-1873.	2.9	94

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37	Climate and desertification: looking at an old problem through new lenses. Frontiers in Ecology and the Environment, 2009, 7, 421-428.	4.0	93
38	Defining desertification: A review. Climatic Change, 1986, 9, 5-18.	3.6	87
39	The state of vegetation in Europe following the 2003 drought. International Journal of Remote Sensing, 2005, 26, 2013-2020.	2.9	86
40	Diagnostic assessment of European gross primary production. Global Change Biology, 2008, 14, 2349-2364.	9.5	86
41	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
42	On the design and validation of surface bidirectional reflectance and albedo models. Remote Sensing of Environment, 1992, 41, 155-167.	11.0	83
43	Extracting information on surface properties from bidirectional reflectance measurements. Journal of Geophysical Research, 1991, 96, 2865-2874.	3.3	81
44	Coupling Diffuse Sky Radiation and Surface Albedo. Journals of the Atmospheric Sciences, 2005, 62, 2580-2591.	1.7	81
45	Relationship between surface reflectance in the visible and mid-IR used in MODIS aerosol algorithm - theory. Geophysical Research Letters, 2002, 29, 31-1-31-4.	4.0	79
46	Surface albedo retrieval from Meteosat: 2. Applications. Journal of Geophysical Research, 2000, 105, 18113-18134.	3.3	73
47	Relating surface albedos in GCM to remotely sensed data. Agricultural and Forest Meteorology, 1990, 52, 109-131.	4.8	66
48	Retrieving surface parameters for climate models from Moderate Resolution Imaging Spectroradiometer (MODIS)-Multiangle Imaging Spectroradiometer (MISR) albedo products. Journal of Geophysical Research, 2007, 112, .	3.3	66
49	On the need to observe vegetation canopies in the near-infrared to estimate visible light absorption. Remote Sensing of Environment, 2009, 113, 10-23.	11.0	64
50	Application to MISR land products of an RPV model inversion package using adjoint and Hessian codes. Remote Sensing of Environment, 2007, 107, 362-375.	11.0	60
51	Uniqueness of multiangular measurements. II. Joint retrieval of vegetation structure and photosynthetic activity from MISR. IEEE Transactions on Geoscience and Remote Sensing, 2002, 40, 1574-1592.	6.3	59
52	Exploiting the MODIS albedos with the Two-stream Inversion Package (JRC-TIP): 1. Effective leaf area index, vegetation, and soil properties. Journal of Geophysical Research, 2011, 116, .	3.3	56
53	A phenology-based method to derive biomass production anomalies for food security monitoring in the Horn of Africa. International Journal of Remote Sensing, 2014, 35, 2472-2492.	2.9	52
54	Characterization of surface heterogeneity detected at the MISR/TERRA subpixel scale. Geophysical Research Letters, 2001, 28, 4639-4642.	4.0	48

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55	Horizontal radiation transport in 3-D forest canopies at multiple spatial resolutions: Simulated impact on canopy absorption. Remote Sensing of Environment, 2006, 103, 379-397.	11.0	48
56	Monitoring the photosynthetic activity of vegetation from remote sensing data. Advances in Space Research, 2006, 38, 2196-2202.	2.6	47
57	Lessons Learned from IPCC AR4: Scientific Developments Needed to Understand, Predict, and Respond to Climate Change. Bulletin of the American Meteorological Society, 2009, 90, 497-514.	3.3	47
58	Radiation transfer in plant canopies: Transmission of direct solar radiation and the role of leaf orientation. Journal of Geophysical Research, 1987, 92, 10985-10995.	3.3	46
59	Using 1-D models to interpret the reflectance anisotropy of 3-D canopy targets: issues and caveats. IEEE Transactions on Geoscience and Remote Sensing, 2005, 43, 2008-2017.	6.3	46
60	Technical Note: Comparing the effectiveness of recent algorithms to fill and smooth incomplete and noisy time series. Atmospheric Chemistry and Physics, 2011, 11, 7905-7923.	4.9	46
61	The effect of surface anisotropy and viewing geometry on the estimation of NDVI from AVHRR. International Journal of Remote Sensing, 1995, 12, 3-27.	1.0	45
62	MERIS potential for land applications. International Journal of Remote Sensing, 1999, 20, 1747-1756.	2.9	45
63	Synergy between 1-D and 3-D radiation transfer models to retrieve vegetation canopy properties from remote sensing data. Journal of Geophysical Research, 2004, 109, n/a-n/a.	3.3	45
64	Desertification and global change. Plant Ecology, 1991, 91, 3-13.	1.2	43
65	An automatic procedure to identify key vegetation phenology events using the JRC-FAPAR products. Advances in Space Research, 2008, 41, 1773-1783.	2.6	43
66	Allometric models for aboveground biomass in dry savanna trees of the Sudan and Sudan-Guinean ecosystems of Southern Senegal. Journal of Forest Research, 2014, 19, 340-347.	1.4	42
67	Partitioning the solar radiant fluxes in forest canopies in the presence of snow. Journal of Geophysical Research, 2008, 113, .	3.3	41
68	Towards a quantitative interpretation of vegetation indices Part 1: Biophysical canopy properties and classical indices. International Journal of Remote Sensing, 1993, 7, 127-150.	1.0	36
69	Potential of multiangular spectral measurements to characterize land surfaces: Conceptual approach and exploratory application. Journal of Geophysical Research, 2000, 105, 17539-17549.	3.3	35
70	Towards a global drylands observing system: Observational requirements and institutional solutions. Land Degradation and Development, 2011, 22, 198-213.	3.9	35
71	Climate change and desertification: Where do we stand, where should we go?. Global and Planetary Change, 2008, 64, 105-110.	3.5	34
72	Global-Scale Comparison of MISR and MODIS Land Surface Albedos. Journal of Climate, 2011, 24, 732-749.	3.2	34

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73	Traceable radiometry underpinning terrestrial- and helio-studies (TRUTHS). Advances in Space Research, 2003, 32, 2253-2261.	2.6	33
74	Investigating the Relationship between the Inter-Annual Variability of Satellite-Derived Vegetation Phenology and a Proxy of Biomass Production in the Sahel. Remote Sensing, 2014, 6, 5868-5884.	4.0	32
75	The potential contribution of satellite remote sensing to the understanding of arid lands processes. Plant Ecology, 1991, 91, 59-72.	1.2	31
76	Early detection of biomass production deficit hot-spots in semi-arid environment using FAPAR time series and a probabilistic approach. Remote Sensing of Environment, 2014, 142, 57-68.	11.0	25
77	Modeling the Scattering of Light by Homogeneous Vegetation in Optical Remote Sensing. Journals of the Atmospheric Sciences, 1998, 55, 137-150.	1.7	23
78	Optimal merging of LAC and GAC data from SeaWiFS. International Journal of Remote Sensing, 2002, 23, 801-807.	2.9	23
79	Note on "An improved model of surface BRDF-atmospheric coupled radiation". IEEE Transactions on Geoscience and Remote Sensing, 2002, 40, 1637-1639.	6.3	23
80	Toward a direct comparison of field and laboratory goniometer measurements. IEEE Transactions on Geoscience and Remote Sensing, 2005, 43, 2666-2675.	6.3	22
81	The effect of soil anisotropy on the radiance field emerging from vegetation canopies. Geophysical Research Letters, 1998, 25, 797-800.	4.0	20
82	Do man-made fires affect Earth's surface reflectance at continental scales?. Eos, 2000, 81, 381.	0.1	19
83	Comparison of MISR and MODIS land surface albedos: Methodology. Journal of Geophysical Research, 2010, 115, .	3.3	18
84	Rayspread: A Virtual Laboratory for Rapid BRF Simulations Over 3-D Plant Canopies. , 2006, , 211-231.		17
85	Radiation transfer in plant canopies: Scattering of solar radiation and canopy reflectance. Journal of Geophysical Research, 1988, 93, 9483-9494.	3.3	16
86	Land Surface Processes in Climate Models: Status and Prospects. , 1989, , 321-340.		16
87	Detection and characterization of boreal coniferous forests from remote sensing data. Journal of Geophysical Research, 2001, 106, 33405-33419.	3.3	15
88	Generating 275-m Resolution Land Surface Products From the Multi-Angle Imaging SpectroRadiometer Data. IEEE Transactions on Geoscience and Remote Sensing, 2012, 50, 3980-3990.	6.3	14
89	Planning for a spaceborne Earth Observation mission: From user expectations to measurement requirements. Environmental Science and Policy, 2015, 54, 419-427.	4.9	12
90	Towards a high spatial resolution limit for pixel-based interpretations of optical remote sensing data. Advances in Space Research, 2008, 41, 1724-1732.	2.6	10

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91	FLuorescence EXplorer (FLEX): an optimised payload to map vegetation photosynthesis from space. , 2006, , .		9
92	Retrieving Canopy Properties from Remote Sensing Measurements. Euro Courses Remote Sensing, 1994, , 109-123.	1.0	9
93	Introduction to special section: Modeling, measurement, and exploitation of anisotropy in the radiation field. Journal of Geophysical Research, 2001, 106, 11903-11907.	3.3	6
94	Foreword to special section on MISR. IEEE Transactions on Geoscience and Remote Sensing, 2002, 40, 1447-1448.	6.3	6
95	Differing Responses to Rainfall Suggest More Than One Functional Type of Grassland in South Africa. Remote Sensing, 2018, 10, 2055.	4.0	6
96	Environmental information extraction from satellite remote sensing data. Geophysical Monograph Series, 2000, , 125-137.	0.1	5
97	Traceable radiometry underpinning terrestrial- and helio-studies (TRUTHS). , 2003, , .		5
98	Handling outliers in model inversion studies: a remote sensing case study using MISR-HR data in South Africa. Southern African Geographical Journal, 2018, 100, 122-139.	1.8	5
99	Indirect Estimation of Structural Parameters in South African Forests Using MISR-HR and LiDAR Remote Sensing Data. Remote Sensing, 2018, 10, 1537.	4.0	5
100	Scientific Issues and Instrumental Opportunities in Remote Sensing and High Resolution Spectrometry. Euro Courses Remote Sensing, 1994, , 25-38.	1.0	5
101	<title>Evaluation of the capability of BRDF models to retrieve structural information on the observed target as described by a three-dimensional ray tracing code</title>. , 1995, 2314, 9.		4
102	Parametric Models to Characterize the Phenology of the Lowveld Savanna at Skukuza, South Africa. Remote Sensing, 2020, 12, 3927.	4.0	4
103	Modeling Spectralon's bidirectional reflectance for in-flight calibration of Earth-orbiting sensors. , 1993, , .		3
104	The impact of multiâ€angular measurements on the accuracy of landâ€surface Albedo retrieval: Peliminary results for the proposed ESA LSPIM mission. International Journal of Remote Sensing, 2000, 19, 191-204.	1.0	3
105	Detailed structural characterisation of the savanna flux site at Skukuza, South Africa. , 2009, , .		3
106	Ten years of MISR observations from Terra: Looking back, ahead, and in between. , 2010, , .		3
107	Snowy backgrounds enhance the absorption of visible light in forest canopies. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	3
108	Replacing missing values in the standard Multi-angle Imaging SpectroRadiometer (MISR) radiometric camera-by-camera cloud mask (RCCM) data product. Earth System Science Data, 2020, 12, 611-628.	9.9	3

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109	Climate and desertification â€" Editorial. Climatic Change, 1986, 9, 1-4.	3.6	2
110	Monitoring FAPAR over land surfaces with remote sensing data. , 2004, , .		2
111	Canopy Architectural Models in Support of Methods Using Hemispherical Photography. Managing Forest Ecosystems, 2017, , 253-286.	0.9	2
112	Understanding vegetation response to climate variability from space: recent advances towards the SPECTRA Mission. , 2004, , .		1
113	Regional drought monitoring using phenologicallytuned biomass production estimates from SPOTVEGETATION FAPAR. , 2013, , .		1
114	Improving the usability of the Multi-angle Imaging SpectroRadiometer (MISR) L1B2 Georectified Radiance Product (2000â€"present) in land surface applications. Earth System Science Data, 2020, 12, 1321-1346.	9.9	1
115	Comment on the paper â€˜Relative role of atmosphere and ocean in the global heat budget: Tropical atlantic and eastern pacificâ€™ by Stefan Hasternath. Quarterly Journal of the Royal Meteorological Society, 1978, 104, 809-812.	2.7	0
116	Environmental Warfare: A Technical, Legal and Policy Appraisal, Edited by Arthur H. Westing. Stockholm International Peace Research Institute, Bergshamra, S-171 73 Solna, Sweden, and Taylor & Francis, London & Philadelphia: xiii + 107 pp., 23.7 Ã— 15.6 Ã— 1.2 cm (also in paperback), [no price indicated], 1984. Environmental Conservation, 1986, 13, 89-90.	1.3	0
117	Exploitation of Surface Albedo Derived From the Meteosat Data to Characterize Land Surface Changes. Advances in Global Change Research, 2001, , 51-67.	1.6	0
118	Characterization of land surface structure using multidirectional MISR/Terra observations. , 2004, 5232, 11.		0
119	Analysis of multi-angular data to retrieve indicators of ecosystem structure. , 2004, 5238, 1.		0
120	Using MISR full spatial resolution level 1B2 data to characterize the savannah environment around the Skukuza CSIR research site. , 2009, , .		0
121	The Contribution of Remote Sensing Technologies and Algorithms to Land Surface Processes Studies. Advances in Global Change Research, 2000, , 71-76.	1.6	0
122	Biosphere Modeling for Climate Studies. , 1994, , 153-174.		0
123	Comment on the paper 'Relative role of atmosphere and ocean in the global heat budget: tropical atlantic and Eastern Pacific'by Stefan Hastenrath (Q.J., 1977, 103, 519-526). Quarterly Journal of the Royal Meteorological Society, 1978, 104, 809-812.	2.7	0