Robert C Levy

List of Publications by Citations

135 papers	14,977 citations	48 h-index	122 g-index
169 ext. papers	17,103 ext. citations	5.7 avg, IF	6.29 L-index

#	Paper	IF	Citations
135	The MODIS Aerosol Algorithm, Products, and Validation. *Journals of the Atmospheric Sciences*, **2005**, 62, 947-973	2.1	2405
134	The Collection 6 MODIS aerosol products over land and ocean. *Atmospheric Measurement Techniques*, **2013**, 6, 2989-3034	4	1202
133	Global estimates of ambient fine particulate matter concentrations from satellite-based aerosol optical depth: development and application. *Environmental Health Perspectives*, **2010**, 118, 847-55	8.4	1174
132	Global evaluation of the Collection 5 MODIS dark-target aerosol products over land. *Atmospheric Chemistry and Physics*, **2010**, 10, 10399-10420	6.8	894
131	Second-generation operational algorithm: Retrieval of aerosol properties over land from inversion of Moderate Resolution Imaging Spectroradiometer spectral reflectance. *Journal of Geophysical Research*, **2007**, 112,		859
130	Global Estimates of Fine Particulate Matter using a Combined Geophysical-Statistical Method with Information from Satellites, Models, and Monitors. *Environmental Science & Technology*, **2016**, 50, 3762-72	10.3	627
129	Global aerosol climatology from the MODIS satellite sensors. *Journal of Geophysical Research*, **2008**, 113,		582
128	Satellite-Based Spatiotemporal Trends in PM2.5 Concentrations: China, 2004-2013. *Environmental Health Perspectives*, **2016**, 124, 184-92	8.4	464
127	MODIS Collection 6 aerosol products: Comparison between Aqua's e-Deep Blue, Dark Target, and merged data sets, and usage recommendations. *Journal of Geophysical Research D: Atmospheres*, **2014**, 119, 13,965-13,989	4.4	377
126	Global aerosol optical properties and application to Moderate Resolution Imaging Spectroradiometer aerosol retrieval over land. *Journal of Geophysical Research*, **2007**, 112,		323
125	Validation of MODIS aerosol retrieval over ocean. *Geophysical Research Letters*, **2002**, 29, MOD3-1	4.9	276
124	MODIS Cloud screening for remote sensing of aerosols over oceans using spatial variability. *Geophysical Research Letters*, **2002**, 29, MOD4-1	4.9	251
123	MODIS 3 km aerosol product: algorithm and global perspective. *Atmospheric Measurement Techniques*, **2013**, 6, 1829-1844	4	237
122	. *IEEE Transactions on Geoscience and Remote Sensing*, **2009**, 47, 4095-4114	8.1	225
121	Multiangle implementation of atmospheric correction (MAIAC): 2. Aerosol algorithm. *Journal of Geophysical Research*, **2011**, 116,		218
120	Multi-decadal aerosol variations from 1980 to 2009: a perspective from observations and a global model. *Atmospheric Chemistry and Physics*, **2014**, 14, 3657-3690	6.8	201
119	Indonesian fire activity and smoke pollution in 2015 show persistent nonlinear sensitivity to El Niño-induced drought. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 9204-9	11.5	178

118	Satellite-derived aerosol optical depth over dark water from MISR and MODIS: Comparisons with AERONET and implications for climatological studies. *Journal of Geophysical Research*, **2007**, 112,		168
117	Evaluation of the MODIS Aerosol Retrievals over Ocean and Land during CLAMS. *Journals of the Atmospheric Sciences*, **2005**, 62, 974-992	2.1	161
116	A critical examination of the residual cloud contamination and diurnal sampling effects on MODIS estimates of aerosol over ocean. *IEEE Transactions on Geoscience and Remote Sensing*, **2005**, 43, 2886-2897	8.1	157
115	Analysis of the performance characteristics of the five-channel Microtops II Sun photometer for measuring aerosol optical thickness and precipitable water vapor. *Journal of Geophysical Research*, **2002**, 107, AAC 5-1		156
114	Scientific impact of MODIS C5 calibration degradation and C6+ improvements. *Atmospheric Measurement Techniques*, **2014**, 7, 4353-4365	4	151
113	Evaluation of the Moderate-Resolution Imaging Spectroradiometer (MODIS) retrievals of dust aerosol over the ocean during PRIDE. *Journal of Geophysical Research*, **2003**, 108,		148
112	Impact of sensor degradation on the MODIS NDVI time series. *Remote Sensing of Environment*, **2012** , 119, 55-61	13.2	144
111	Global Estimates and Long-Term Trends of Fine Particulate Matter Concentrations (1998-2018). *Environmental Science & Technology*, **2020**, 54, 7879-7890	10.3	143
110	Aerosol distribution in the Northern Hemisphere during ACE-Asia: Results from global model, satellite observations, and Sun photometer measurements. *Journal of Geophysical Research*, **2004**, 109,		142
109	Satellite-based estimates of ground-level fine particulate matter during extreme events: A case study of the Moscow fires in 2010. *Atmospheric Environment*, **2011**, 45, 6225-6232	5.3	129
108	MODIS 3 km aerosol product: applications over land in an urban/suburban region. *Atmospheric Measurement Techniques*, **2013**, 6, 1747-1759	4	117
107	The inter-comparison of major satellite aerosol retrieval algorithms using simulated intensity and polarization characteristics of reflected light. *Atmospheric Measurement Techniques*, **2010**, 3, 909-932	4	114
106	Glacial flour dust storms in the Gulf of Alaska: Hydrologic and meteorological controls and their importance as a source of bioavailable iron. *Geophysical Research Letters*, **2011**, 38, n/a-n/a	4.9	108
105	MODIS observation of aerosols and estimation of aerosol radiative forcing over southern Africa during SAFARI 2000. *Journal of Geophysical Research*, **2003**, 108, n/a-n/a		108
104	A Critical Look at Deriving Monthly Aerosol Optical Depth From Satellite Data. *IEEE Transactions on Geoscience and Remote Sensing*, **2009**, 47, 2942-2956	8.1	100
103	Optimal estimation for global ground-level fine particulate matter concentrations. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 5621-5636	4.4	97
102	A surface reflectance scheme for retrieving aerosol optical depth over urban surfaces in MODIS Dark Target retrieval algorithm. *Atmospheric Measurement Techniques*, **2016**, 9, 3293-3308	4	95
101	Radiative transfer codes for atmospheric correction and aerosol retrieval: intercomparison study. *Applied Optics*, **2008**, 47, 2215-26	1.7	90

100	Global aerosol remote sensing from MODIS. *Advances in Space Research*, **2004**, 34, 820-827	2.4	89
99	NASA A-Train and Terra observations of the 2010 Russian wildfires. *Atmospheric Chemistry and Physics*, **2011**, 11, 9287-9301	6.8	88
98	Evaluation of VIIRS, GOCI, and MODIS Collection 6 AOD retrievals against ground sunphotometer observations over East Asia. *Atmospheric Chemistry and Physics*, **2016**, 16, 1255-1269	6.8	81
97	Towards a long-term global aerosol optical depth record: applying a consistent aerosol retrieval algorithm to MODIS and VIIRS-observed reflectance. *Atmospheric Measurement Techniques*, **2015**, 8, 4083-4110	4	78
96	Evaluation of the Moderate Resolution Imaging Spectroradiometer aerosol products at two Aerosol Robotic Network stations in China. *Journal of Geophysical Research*, **2007**, 112,		77
95	The Collection 6 MODIS aerosol products over land and ocean **2013**,		69
94	Validation of MODIS 3 km land aerosol optical depth from NASA's EOS Terra and Aqua missions. *Atmospheric Measurement Techniques*, **2018**, 11, 3145-3159	4	67
93	Impact of California Fires on Local and Regional Air Quality: The Role of a Low-Cost Sensor Network and Satellite Observations. *GeoHealth*, **2018**, 2, 172-181	5	63
92	Saharan dust transport to the Caribbean during PRIDE: 2. Transport, vertical profiles, and deposition in simulations of in situ and remote sensing observations. *Journal of Geophysical Research*, **2003**, 108,		61
91	Spatiotemporal variability and contribution of different aerosol types to the Aerosol Optical Depth over the Eastern Mediterranean. *Atmospheric Chemistry and Physics*, **2016**, 16, 13853-13884	6.8	57
90	Merging regional and global aerosol optical depth records from major available satellite products. *Atmospheric Chemistry and Physics*, **2020**, 20, 2031-2056	6.8	56
89	Exploring systematic offsets between aerosol products from the two MODIS sensors. *Atmospheric Measurement Techniques*, **2018**, 11, 4073-4092	4	49
88	Remote sensing of surface visibility from space: A look at the United States East Coast. *Atmospheric Environment*, **2013**, 81, 136-147	5.3	48
87	Effects of neglecting polarization on the MODIS aerosol retrieval over land. *IEEE Transactions on Geoscience and Remote Sensing*, **2004**, 42, 2576-2583	8.1	47
86	Suborbital Measurements of Spectral Aerosol Optical Depth and Its Variability at Subsatellite Grid Scales in Support of CLAMS 2001. *Journals of the Atmospheric Sciences*, **2005**, 62, 993-1007	2.1	43
85	Retrieving aerosol in a cloudy environment: aerosol product availability as a function of spatial resolution. *Atmospheric Measurement Techniques*, **2012**, 5, 1823-1840	4	42
84	Estimates of African Dust Deposition Along the Trans-Atlantic Transit Using the Decade-long Record of Aerosol Measurements from CALIOP, MODIS, MISR, and IASI. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 7975-7996	4.4	40
83	Response to "Toward unified satellite climatology of aerosol properties. 3. MODIS versus MISR versus AERONET" *Journal of Quantitative Spectroscopy and Radiative Transfer*, **2011**, 112, 901-909	2.1	40

82	Retrieval of aerosol optical properties using MERIS observations: Algorithm and some first results. *Remote Sensing of Environment*, **2017**, 197, 125-140	13.2	37
81	Observations of the Interaction and Transport of Fine Mode Aerosols with Cloud and/or Fog in Northeast Asia from Aerosol Robotic Network (AERONET) and Satellite Remote Sensing. *Journal of Geophysical Research D: Atmospheres*, **2018**, 123, 5560-5587	4.4	33
80	Testing aerosol properties in MODIS Collection 4 and 5 using airborne sunphotometer observations in INTEX-B/MILAGRO. *Atmospheric Chemistry and Physics*, **2009**, 9, 8159-8172	6.8	33
79	Airborne Sun photometer measurements of aerosol optical depth and columnar water vapor during the Puerto Rico Dust Experiment and comparison with land, aircraft, and satellite measurements. *Journal of Geophysical Research*, **2003**, 108,		33
78	Global evaluation of the Collection 5 MODIS dark-target aerosol products over land		33
77	MODIS 3 km aerosol product: algorithm and global perspective **2013**,		32
76	Evaluating the assumptions of surface reflectance and aerosol type selection within the MODIS aerosol retrieval over land: the problem of dust type selection. *Atmospheric Measurement Techniques*, **2011**, 4, 201-214	4	31
75	Impact of satellite viewing-swath width on global and regional aerosol optical thickness statistics and trends. *Atmospheric Measurement Techniques*, **2014**, 7, 2313-2335	4	30
74	Validation of GRASP algorithm product from POLDER/PARASOL data and assessment of multi-angular polarimetry potential for aerosol monitoring. *Earth System Science Data*, **2020**, 12, 3573-3620	10.5	30
73	Characterizing the 2015 Indonesia fire event using modified MODIS aerosol retrievals. *Atmospheric Chemistry and Physics*, **2019**, 19, 259-274	6.8	29
72	Comparison of MODIS 3 km and 10 km resolution aerosol optical depth retrievals over land with airborne sunphotometer measurements during ARCTAS summer 2008. *Atmospheric Chemistry and Physics*, **2014**, 14, 2015-2038	6.8	28
71	Temporal trend in anthropogenic sulfur aerosol transport from central and eastern Europe to Israel. *Journal of Geophysical Research*, **2009**, 114,		26
70	Evaluation and Wind Speed Dependence of MODIS Aerosol Retrievals Over Open Ocean. *IEEE Transactions on Geoscience and Remote Sensing*, **2012**, 50, 429-435	8.1	25
69	Improved retrieval of aerosol size-resolved properties from moderate resolution imaging spectroradiometer over India: Role of aerosol model and surface reflectance. *Journal of Geophysical Research*, **2010**, 115,		25
68	Development of an operational land water mask for MODIS Collection 6, and influence on downstream data products. *International Journal of Digital Earth*, **2017**, 10, 207-218	3.9	23
67	An assessment of the quality of aerosol retrievals over the Red Sea and evaluation of the climatological cloud-free dust direct radiative effect in the region. *Journal of Geophysical Research D: Atmospheres*, **2015**, 120, 10,862-10,878	4.4	23
66	MODIS Retrieval of Aerosol Optical Depth over Turbid Coastal Water. *Remote Sensing*, **2017**, 9, 595	5	22
65	Applying the Dark Target aerosol algorithm with Advanced Himawari Imager observations during the KORUS-AQ field campaign. *Atmospheric Measurement Techniques*, **2019**, 12, 6557-6577	4	22

64	AERONET Remotely Sensed Measurements and Retrievals of Biomass Burning Aerosol Optical Properties During the 2015 Indonesian Burning Season. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 4722-4740	4.4	21
63	Correcting for trace gas absorption when retrieving aerosol optical depth from satellite observations of reflected shortwave radiation. *Atmospheric Measurement Techniques*, **2018**, 11, 3205-3219	4	21
62	Classification of dust days by satellite remotely sensed aerosol products. *International Journal of Remote Sensing*, **2013**, 34, 2672-2688	3.1	21
61	Evaluation of aerosol optical depth and aerosol models from VIIRS retrieval algorithms over North China Plain. *Remote Sensing*, **2017**, 9,	5	21
60	Air pollution scenario over Pakistan: Characterization and ranking of extremely polluted cities using long-term concentrations of aerosols and trace gases. *Remote Sensing of Environment*, **2021**, 264, 112617	13.2	21
59	Aerosol daytime variations over North and South America derived from multiyear AERONET measurements. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		20
58	Retrieving Aerosol Characteristics From the PACE Mission, Part 2: Multi-Angle and Polarimetry. *Frontiers in Environmental Science*, **2019**, 7,	4.8	19
57	Continuing the MODIS Dark Target Aerosol Time Series with VIIRS. *Remote Sensing*, **2020**, 12, 308	5	19
56	Effects of COVID-19 lockdowns on fine particulate matter concentrations. *Science Advances*, **2021**, 7,	14.3	17
55	Retrievals of Aerosol Size Distribution, Spherical Fraction, and Complex Refractive Index From Airborne In Situ Angular Light Scattering and Absorption Measurements. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 7997-8024	4.4	16
54	Spatiotemporal coherence of mean and extreme aerosol particle events over eastern North America as observed from satellite. *Atmospheric Environment*, **2015**, 112, 126-135	5.3	16
53	Improvement of MODIS aerosol retrievals near clouds. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 9168-9181	4.4	16
52	Monthly Global Estimates of Fine Particulate Matter and Their Uncertainty. *Environmental Science & Technology*, **2021**, 55, 15287-15300	10.3	16
51	The Dark Target Algorithm for Observing the Global Aerosol System: Past, Present, and Future. *Remote Sensing*, **2020**, 12, 2900	5	16
50	Interannual variability and trends of combustion aerosol and dust in major continental outflows revealed by MODIS retrievals and CAM5 simulations during 2003-2017. *Atmospheric Chemistry and Physics*, **2020**, 20, 139-161	6.8	15
49	Air pollution trends measured from Terra: CO and AOD over industrial, fire-prone, and background regions. *Remote Sensing of Environment*, **2021**, 256, 112275	13.2	15
48	Retrieving Aerosol Characteristics From the PACE Mission, Part 1: Ocean Color Instrument. *Frontiers in Earth Science*, **2019**, 7,	3.5	14
47	An AeroCom-AeroSat study: intercomparison of satellite AOD datasets for aerosol model evaluation. *Atmospheric Chemistry and Physics*, **2020**, 20, 12431-12457	6.8	14

46	Bayesian aerosol retrieval algorithm for MODIS AOD retrieval over land. *Atmospheric Measurement Techniques*, **2018**, 11, 1529-1547	4	14
45	Developing and diagnosing climate change indicators of regional aerosol optical properties. *Scientific Reports*, **2017**, 7, 18093	4.9	12
44	Retrieval of aerosol optical properties using MERIS observations: Algorithm and some first results. *Remote Sensing of Environment*, **2017**, 197, 125-140	13.2	12
43	Dust Aerosol Retrieval Over the Oceans With the MODIS/VIIRS Dark-Target Algorithm: 1. Dust Detection. *Earth and Space Science*, **2020**, 7, e2020EA001221	3.1	11
42	The dark-land MODIS collection 5 aerosol retrieval: Algorithm development and product evaluation **2009**, 19-68		11
41	Exploring aerosols near clouds with high-spatial-resolution aircraft remote sensing during SEACRS. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 2148-2173	4.4	10
40	High-Resolution Gridded Level 3 Aerosol Optical Depth Data from MODIS. *Remote Sensing*, **2020**, 12, 2847	5	10
39	A Spatial-Temporal Extreme Precipitation Database from GPM IMERG. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 10344-10363	4.4	10
38	Global bias adjustment for MODIS aerosol optical thickness using neural network. *Journal of Applied Remote Sensing*, **2013**, 7, 073514	1.4	10
37	Remote Sensing of Spectral Aerosol Properties: A Classroom Experience. *Bulletin of the American Meteorological Society*, **2007**, 88, 25-30	6.1	9
36	New Statistical Model for Variability of Aerosol Optical Thickness: Theory and Application to MODIS Data over Ocean. *Journals of the Atmospheric Sciences*, **2016**, 73, 821-837	2.1	8
35	Science impact of MODIS C5 calibration degradation and C6+ improvements **2014**,		8
34	Adaption of the MODIS aerosol retrieval algorithm using airborne spectral surface reflectance measurements over urban areas: a case study. *Atmospheric Measurement Techniques*, **2015**, 8, 5237-5249	4	7
33	Smoke over haze: Comparative analysis of satellite, surface radiometer, and airborne in situ measurements of aerosol optical properties and radiative forcing over the eastern United States. *Journal of Geophysical Research*, **2005**, 110,		7
32	The inter-comparison of major satellite aerosol retrieval algorithms using simulated intensity and polarization characteristics of reflected light		7
31	MODIS 3 km aerosol product: applications over land in an urban/suburban region **2013**,		6
30	An Evaluation of MODIS-Retrieved Aerosol Optical Depth over a Mountainous AERONET Site in the Southeastern US. *Aerosol and Air Quality Research*, **2017**, 16, 3243-3255	4.6	6
29	Multi-decadal variations of atmospheric aerosols from 1980 to 2009: sources and regional trends		6

28	Multi-sensor cloud and aerosol retrieval simulator and remote sensing from model parameters Part 2: Aerosols. *Geoscientific Model Development*, **2016**, 9, 2377-2389	6.3	5
27	NASA A-Train and Terra observations of the 2010 Russian wildfires		5
26	Dust Aerosol Retrieval Over the Oceans With the MODIS/VIIRS Dark Target Algorithm: 2. Nonspherical Dust Model. *Earth and Space Science*, **2020**, 7, e2020EA001222	3.1	5
25	Evaluation of VIIRS, GOCI, and MODIS Collection 6 AOD retrievals against ground sunphotometer measurements over East Asia		4
24	Testing the Two-Layer Model for Correcting Near Cloud Reflectance Enhancement Using LES/SHDOM Simulated Radiances. *Journal of Geophysical Research D: Atmospheres*, **2016**, 121, 9661-9674	4.4	3
23	A Hybrid Approach for Predicting PM 2.5 Exposure: van Donkelaar et al. Respond. *Environmental Health Perspectives*, **2010**, 118,	8.4	3
22	Implications of satellite swath width on global aerosol optical thickness statistics **2012**,		3
21	Towards a long-term global aerosol optical depth record: applying a consistent aerosol retrieval algorithm to MODIS and VIIRS-observed reflectance		3
20	Spatiotemporal variability and contribution of different aerosol types to the Aerosol Optical Depth over the Eastern Mediterranean **2016**,		3
19	Observation and modeling of the historic Godzilla African dust intrusion into the Caribbean Basin and the southern US in June 2020. *Atmospheric Chemistry and Physics*, **2021**, 21, 12359-12383	6.8	3
18	Characterizing the 2015 Indonesia Fire Event Using Modified MODIS Aerosol Retrievals **2018**,		2
17	Correction of MODIS aerosol retrieval for 3D radiative effects in broken cloud fields **2013**,		2
16	Retrieving aerosol in a cloudy environment: aerosol availability as a function of spatial and temporal resolution **2012**,		2
15	Comparison of MODIS 3 km and 10 km resolution aerosol optical depth retrievals over land with airborne sunphotometer measurements during ARCTAS summer 2008		2
14	Evaluating the assumptions of surface reflectance and aerosol type selection within the MODIS aerosol retrieval over land: the problem of dust type selection		2
13	Impact of satellite viewing swath width on global and regional aerosol optical thickness statistics and trends		2
12	A Dark Target research aerosol algorithm for MODIS observations over eastern China: increasing coverage while maintaining accuracy at high aerosol loading. *Atmospheric Measurement Techniques*, **2021**, 14, 3449-3468	4	2
11	Aerosol properties in cloudy environments from remote sensing observations: a review of the current state of knowledge. *Bulletin of the American Meteorological Society*, **2021**, 1-57	6.1	2

List of Publications

10	New seasonal pattern of pollution emerges from changing North American wildfires.. *Nature Communications*, **2022**, 13, 2043	17.4	2
9	An AeroCom/AeroSat study: Intercomparison of Satellite AOD Datasets for Aerosol Model Evaluation **2020**,		1
8	Merging regional and global AOD records from 15 available satellite products **2019**,		1
7	Growing up MODIS: Towards a mature aerosol climate data record **2013**,		1
6	Testing aerosol properties in MODIS (MOD04/MYD04) Collection 4 and 5 using airborne sunphotometer observations in INTEX-B/MILAGRO		1
5	First Retrieval of AOD at Fine Resolution Over Shallow and Turbid Coastal Waters From MODIS. *Geophysical Research Letters*, **2021**, 48, e2021GL094344	4.9	1
4	Atmospheric chemistry over southern Africa. *Eos*, **2012**, 93, 110-110	1.5	0
3	Analysis of simultaneous aerosol and ocean glint retrieval using multi-angle observations. *Atmospheric Measurement Techniques*, **2021**, 14, 3233-3252	4	0
2	Current and Future Perspectives of Aerosol Research at NASA Goddard Space Flight Center. *Bulletin of the American Meteorological Society*, **2014**, 95, ES203-ES207	6.1	
1	Constraining Aerosol Phase Function Using Dual-View Geostationary Satellites. *Journal of Geophysical Research D: Atmospheres*, **2021**, 126, e2021JD035209	4.4	