

Ann M Middlebrook

List of Publications by Year in descending order

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115
papers

18,801
citations

25034

57
h-index

20961

115
g-index

155
all docs

155
docs citations

155
times ranked

9228
citing authors

#	ARTICLE	IF	CITATIONS
1	Evolution of Organic Aerosols in the Atmosphere. <i>Science</i> , 2009, 326, 1525-1529.	12.6	3,374
2	Ubiquity and dominance of oxygenated species in organic aerosols in anthropogenically influenced Northern Hemisphere midlatitudes. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	1,773
3	Chemical and microphysical characterization of ambient aerosols with the aerodyne aerosol mass spectrometer. <i>Mass Spectrometry Reviews</i> , 2007, 26, 185-222.	5.4	1,708
4	A generalised method for the extraction of chemically resolved mass spectra from Aerodyne aerosol mass spectrometer data. <i>Journal of Aerosol Science</i> , 2004, 35, 909-922.	3.8	702
5	Evaluation of Composition-Dependent Collection Efficiencies for the Aerodyne Aerosol Mass Spectrometer using Field Data. <i>Aerosol Science and Technology</i> , 2012, 46, 258-271.	3.1	699
6	Budget of organic carbon in a polluted atmosphere: Results from the New England Air Quality Study in 2002. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	689
7	A large atomic chlorine source inferred from mid-continental reactive nitrogen chemistry. <i>Nature</i> , 2010, 464, 271-274.	27.8	562
8	Single-particle mass spectrometry of tropospheric aerosol particles. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	442
9	Brown carbon and internal mixing in biomass burning particles. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 14802-14807.	7.1	394
10	Influence of sea-salt on aerosol radiative properties in the Southern Ocean marine boundary layer. <i>Nature</i> , 1998, 392, 62-65.	27.8	355
11	Collection Efficiencies in an Aerodyne Aerosol Mass Spectrometer as a Function of Particle Phase for Laboratory Generated Aerosols. <i>Aerosol Science and Technology</i> , 2008, 42, 884-898.	3.1	340
12	Observations of organic material in individual marine particles at Cape Grim during the First Aerosol Characterization Experiment (ACE 1). <i>Journal of Geophysical Research</i> , 1998, 103, 16475-16483.	3.3	305
13	Biomass burning in Siberia and Kazakhstan as an important source for haze over the Alaskan Arctic in April 2008. <i>Geophysical Research Letters</i> , 2009, 36, .	4.0	289
14	Characteristics, sources, and transport of aerosols measured in spring 2008 during the aerosol, radiation, and cloud processes affecting Arctic Climate (ARCPAC) Project. <i>Atmospheric Chemistry and Physics</i> , 2011, 11, 2423-2453.	4.9	259
15	Exploring the vertical profile of atmospheric organic aerosol: comparing 17 aircraft field campaigns with a global model. <i>Atmospheric Chemistry and Physics</i> , 2011, 11, 12673-12696.	4.9	240
16	Organic aerosol formation in urban and industrial plumes near Houston and Dallas, Texas. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	230
17	Transport of Asian ozone pollution into surface air over the western United States in spring. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	218
18	A volatility basis set model for summertime secondary organic aerosols over the eastern United States in 2006. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	195

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19	Gasoline emissions dominate over diesel in formation of secondary organic aerosol mass. <i>Geophysical Research Letters</i> , 2012, 39, .	4.0	189
20	Sources of particulate matter in the northeastern United States in summer: 1. Direct emissions and secondary formation of organic matter in urban plumes. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	173
21	An important contribution to springtime Arctic aerosol from biomass burning in Russia. <i>Geophysical Research Letters</i> , 2010, 37, .	4.0	172
22	Infrared optical constants of H ₂ O ice, amorphous nitric acid solutions, and nitric acid hydrates. <i>Journal of Geophysical Research</i> , 1994, 99, 25631.	3.3	163
23	Organic Aerosol Formation Downwind from the Deepwater Horizon Oil Spill. <i>Science</i> , 2011, 331, 1295-1299.	12.6	162
24	Aerosol direct radiative effects over the northwest Atlantic, northwest Pacific, and North Indian Oceans: estimates based on in-situ chemical and optical measurements and chemical transport modeling. <i>Atmospheric Chemistry and Physics</i> , 2006, 6, 1657-1732.	4.9	135
25	Nighttime removal of NO _x in the summer marine boundary layer. <i>Geophysical Research Letters</i> , 2004, 31, n/a-n/a.	4.0	127
26	Direct observations of N ₂ O ₅ reactivity on ambient aerosol particles. <i>Geophysical Research Letters</i> , 2009, 36, .	4.0	124
27	Reactive uptake coefficients for N ₂ O ₅ determined from aircraft measurements during the Second Texas Air Quality Study: Comparison to current model parameterizations. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	124
28	Characterization of model polar stratospheric cloud films using Fourier transform infrared spectroscopy and temperature programmed desorption. <i>Journal of Geophysical Research</i> , 1992, 97, 8065-8074.	3.3	122
29	Design and Operation of a Pressure-Controlled Inlet for Airborne Sampling with an Aerodynamic Aerosol Lens. <i>Aerosol Science and Technology</i> , 2008, 42, 465-471.	3.1	122
30	Impact of Fuel Quality Regulation and Speed Reductions on Shipping Emissions: Implications for Climate and Air Quality. <i>Environmental Science & Technology</i> , 2011, 45, 9052-9060.	10.0	115
31	Understanding the role of the ground surface in HONO vertical structure: High resolution vertical profiles during NACHTT. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 10,155.	3.3	111
32	Fourier transform infrared studies of model polar stratospheric cloud surfaces: Growth and evaporation of ice and nitric acid/ice. <i>Journal of Geophysical Research</i> , 1990, 95, 22423-22431.	3.3	110
33	Ammonia sources in the California South Coast Air Basin and their impact on ammonium nitrate formation. <i>Geophysical Research Letters</i> , 2012, 39, .	4.0	110
34	Atmospheric emissions from the Deepwater Horizon spill constrain air-water partitioning, hydrocarbon fate, and leak rate. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	4.0	107
35	Chemical components of single particles measured with Particle Analysis by Laser Mass Spectrometry (PALMS) during the Atlanta SuperSite Project: Focus on organic/sulfate, lead, soot, and mineral particles. <i>Journal of Geophysical Research</i> , 2002, 107, AAC 1-1.	3.3	106
36	Fourier transform infrared studies of thin H ₂ SO ₄ /H ₂ O films: Formation, water uptake, and solid-liquid phase changes. <i>Journal of Geophysical Research</i> , 1993, 98, 20473-20481.	3.3	96

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37	Chlorine activation within urban or power plant plumes: Vertically resolved ClNO ₂ and Cl ₂ measurements from a tall tower in a polluted continental setting. Journal of Geophysical Research D: Atmospheres, 2013, 118, 8702-8715.	3.3	94
38	Airborne observations of ammonia and ammonium nitrate formation over Houston, Texas. Journal of Geophysical Research, 2010, 115, .	3.3	91
39	Airborne cloud condensation nuclei measurements during the 2006 Texas Air Quality Study. Journal of Geophysical Research, 2011, 116, .	3.3	91
40	A comparison of particle mass spectrometers during the 1999 Atlanta Supersite Project. Journal of Geophysical Research, 2003, 108, .	3.3	90
41	An evaluation of global organic aerosol schemes using airborne observations. Atmospheric Chemistry and Physics, 2020, 20, 2637-2665.	4.9	90
42	Brown carbon absorption linked to organic mass tracers in biomass burning particles. Atmospheric Chemistry and Physics, 2013, 13, 2415-2422.	4.9	89
43	Aerosol optical properties in the southeastern United States in summer " Part 1: Hygroscopic growth. Atmospheric Chemistry and Physics, 2016, 16, 4987-5007.	4.9	88
44	N ₂ O ₅ uptake coefficients and nocturnal NO ₂ removal rates determined from ambient wintertime measurements. Journal of Geophysical Research D: Atmospheres, 2013, 118, 9331-9350.	3.3	87
45	Kinetics of ethane oxidation on vanadium oxide. The Journal of Physical Chemistry, 1990, 94, 5029-5033.	2.9	85
46	Hygroscopicity and composition of Alaskan Arctic CCN during April 2008. Atmospheric Chemistry and Physics, 2011, 11, 11807-11825.	4.9	85
47	An Odd Oxygen Framework for Wintertime Ammonium Nitrate Aerosol Pollution in Urban Areas: NO _x and VOC Control as Mitigation Strategies. Geophysical Research Letters, 2019, 46, 4971-4979.	4.0	80
48	In situ single-particle characterization at Cape Grim. Journal of Geophysical Research, 1998, 103, 16485-16491.	3.3	79
49	Air quality implications of the Deepwater Horizon oil spill. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 20280-20285.	7.1	79
50	Anthropogenic enhancements to production of highly oxygenated molecules from autoxidation. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 6641-6646.	7.1	78
51	Cluster Analysis of Data from the Particle Analysis by Laser Mass Spectrometry (PALMS) Instrument. Aerosol Science and Technology, 2003, 37, 382-391.	3.1	76
52	Nocturnal odd-oxygen budget and its implications for ozone loss in the lower troposphere. Geophysical Research Letters, 2006, 33, .	4.0	75
53	Thresholds for Laser-Induced Ion Formation from Aerosols in a Vacuum Using Ultraviolet and Vacuum-Ultraviolet Laser Wavelengths. Aerosol Science and Technology, 1997, 26, 544-559.	3.1	74
54	Absorbing aerosol in the troposphere of the Western Arctic during the 2008 ARCTAS/ARCPAC airborne field campaigns. Atmospheric Chemistry and Physics, 2011, 11, 7561-7582.	4.9	70

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55	Hygroscopicity and composition of California CCN during summer 2010. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	70
56	Nitrogen, Aerosol Composition, and Halogens on a Tall Tower (NACHTT): Overview of a wintertime air chemistry field study in the front range urban corridor of Colorado. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 8067-8085.	3.3	68
57	Bromine, iodine, and chlorine in single aerosol particles at Cape Grim. <i>Geophysical Research Letters</i> , 1997, 24, 3197-3200.	4.0	65
58	Nitrate and oxidized organic ions in single particle mass spectra during the 1999 Atlanta Supersite Project. <i>Journal of Geophysical Research</i> , 2003, 108, SOS 5-1.	3.3	65
59	Modeling regional aerosol and aerosol precursor variability over California and its sensitivity to emissions and long-range transport during the 2010 CalNex and CARES campaigns. <i>Atmospheric Chemistry and Physics</i> , 2014, 14, 10013-10060.	4.9	62
60	Fourier transform infrared studies of the interaction of HCl with model polar stratospheric cloud films. <i>Journal of Geophysical Research</i> , 1993, 98, 10563-10571.	3.3	61
61	Dominance of organic aerosols in the marine boundary layer over the Gulf of Maine during NEAQS 2002 and their role in aerosol light scattering. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	61
62	Instrumentation and measurement strategy for the NOAA SENEX aircraft campaign as part of the Southeast Atmosphere Study 2013. <i>Atmospheric Measurement Techniques</i> , 2016, 9, 3063-3093.	3.1	58
63	Real refractive indices of infrared-characterized nitric-acid/ice films: Implications for optical measurements of polar stratospheric clouds. <i>Journal of Geophysical Research</i> , 1994, 99, 25655.	3.3	55
64	A new method to quantify mineral dust and other aerosol species from aircraft platforms using single-particle mass spectrometry. <i>Atmospheric Measurement Techniques</i> , 2019, 12, 6209-6239.	3.1	55
65	Evolution of aerosol properties impacting visibility and direct climate forcing in an ammonia-rich urban environment. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	54
66	Distribution of lead in single atmospheric particles. <i>Atmospheric Chemistry and Physics</i> , 2007, 7, 3195-3210.	4.9	53
67	Biogenic VOC oxidation and organic aerosol formation in an urban nocturnal boundary layer: aircraft vertical profiles in Houston, TX. <i>Atmospheric Chemistry and Physics</i> , 2013, 13, 11317-11337.	4.9	51
68	Laboratory studies of the formation of polar stratospheric clouds: Nitric acid condensation on thin sulfuric acid films. <i>Journal of Geophysical Research</i> , 1995, 100, 20969.	3.3	50
69	In situ vertical profiles of aerosol extinction, mass, and composition over the southeast United States during SENEX and SEAC<sup>4</sup</sup>RS: observations of a modest aerosol enhancement aloft. <i>Atmospheric Chemistry and Physics</i> , 2015, 15, 7085-7102.	4.9	50
70	Enhanced formation of isoprene-derived organic aerosol in sulfur-rich power plant plumes during Southeast Nexus. <i>Journal of Geophysical Research D: Atmospheres</i> , 2016, 121, 11,137.	3.3	50
71	Sources of particulate matter in the northeastern United States in summer: 2. Evolution of chemical and microphysical properties. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	48
72	Observational constraints on glyoxal production from isoprene oxidation and its contribution to organic aerosol over the Southeast United States. <i>Journal of Geophysical Research D: Atmospheres</i> , 2016, 121, 9849-9861.	3.3	48

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73	Secondary organic aerosol (SOA) yields from NO ₂ radical + isoprene based on nighttime aircraft power plant plume transects. <i>Atmospheric Chemistry and Physics</i> , 2018, 18, 11663-11682.	4.9	47
74	On the Purity of Laboratory-Generated Sulfuric Acid Droplets and Ambient Particles Studied by Laser Mass Spectrometry. <i>Aerosol Science and Technology</i> , 1997, 27, 293-307.	3.1	46
75	Design and Performance of a Pumped Counterflow Virtual Impactor. <i>Aerosol Science and Technology</i> , 2006, 40, 969-976.	3.1	46
76	Mass Spectral Analysis of Organic Aerosol Formed Downwind of the Deepwater Horizon Oil Spill: Field Studies and Laboratory Confirmations. <i>Environmental Science & Technology</i> , 2012, 46, 8025-8034.	10.0	45
77	Aerosol optical properties in the southeastern United States in summer – Part 2: Sensitivity of aerosol optical depth to relative humidity and aerosol parameters. <i>Atmospheric Chemistry and Physics</i> , 2016, 16, 5009-5019.	4.9	44
78	Overview of the 1999 Atlanta Supersite Project. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	43
79	Growth of nitric acid hydrates on thin sulfuric acid films. <i>Geophysical Research Letters</i> , 1994, 21, 867-870.	4.0	39
80	Cluster Analysis of the Organic Peaks in Bulk Mass Spectra Obtained During the 2002 New England Air Quality Study with an Aerodyne Aerosol Mass Spectrometer. <i>Atmospheric Chemistry and Physics</i> , 2006, 6, 5649-5666.	4.9	39
81	Comment on “The effects of molecular weight and thermal decomposition on the sensitivity of a thermal desorption aerosol mass spectrometer”. <i>Aerosol Science and Technology</i> , 2016, 50, i-xv.	3.1	39
82	Evidence in biomass burning smoke for a light-absorbing aerosol with properties intermediate between brown and black carbon. <i>Aerosol Science and Technology</i> , 2019, 53, 976-989.	3.1	37
83	Characteristics of black carbon aerosol from a surface oil burn during the Deepwater Horizon oil spill. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	4.0	34
84	New insights into atmospheric sources and sinks of isocyanic acid, HNCO, from recent urban and regional observations. <i>Journal of Geophysical Research D: Atmospheres</i> , 2014, 119, 1060-1072.	3.3	34
85	Nighttime and daytime dark oxidation chemistry in wildfire plumes: an observation and model analysis of FIREX-AQ aircraft data. <i>Atmospheric Chemistry and Physics</i> , 2021, 21, 16293-16317.	4.9	34
86	Evaluating N ₂ O ₅ heterogeneous hydrolysis parameterizations for CalNex 2010. <i>Journal of Geophysical Research D: Atmospheres</i> , 2016, 121, 5051-5070.	3.3	33
87	Airborne and ground-based observations of ammonium-nitrate-dominated aerosols in a shallow boundary layer during intense winter pollution episodes in northern Utah. <i>Atmospheric Chemistry and Physics</i> , 2018, 18, 17259-17276.	4.9	33
88	On the contribution of nocturnal heterogeneous reactive nitrogen chemistry to particulate matter formation during wintertime pollution events in Northern Utah. <i>Atmospheric Chemistry and Physics</i> , 2019, 19, 9287-9308.	4.9	33
89	Crystallization Kinetics of HNO ₃ /H ₂ O Films Representative of Polar Stratospheric Clouds. <i>Journal of Physical Chemistry A</i> , 1997, 101, 2112-2119.	2.5	32
90	CCN Spectra, Hygroscopicity, and Droplet Activation Kinetics of Secondary Organic Aerosol Resulting from the 2010 Deepwater Horizon Oil Spill. <i>Environmental Science & Technology</i> , 2012, 46, 3093-3100.	10.0	32

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91	Chemical transport models often underestimate inorganic aerosol acidity in remote regions of the atmosphere. <i>Communications Earth & Environment</i> , 2021, 2, .	6.8	32
92	Variability and Time of Day Dependence of Ozone Photochemistry in Western Wildfire Plumes. <i>Environmental Science & Technology</i> , 2021, 55, 10280-10290.	10.0	31
93	Formation of model polar stratospheric cloud films. <i>Geophysical Research Letters</i> , 1992, 19, 2417-2420.	4.0	28
94	Spectroscopic studies of model polar stratospheric cloud films. <i>Spectrochimica Acta Part A: Molecular Spectroscopy</i> , 1992, 48, 1303-1313.	0.1	28
95	Evaporation studies of model polar stratospheric cloud films. <i>Geophysical Research Letters</i> , 1996, 23, 2145-2148.	4.0	27
96	Characterization of a catalyst-based conversion technique to measure total particulate nitrogen and organic carbon and comparison to a particle mass measurement instrument. <i>Atmospheric Measurement Techniques</i> , 2018, 11, 2749-2768.	3.1	21
97	Vertically resolved chemical characteristics and sources of submicron aerosols measured on a Tall Tower in a suburban area near Denver, Colorado in winter. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 13,591.	3.3	18
98	Airborne measurements of the atmospheric emissions from a fuel ethanol refinery. <i>Journal of Geophysical Research D: Atmospheres</i> , 2015, 120, 4385-4397.	3.3	16
99	Role of Criegee Intermediates in Secondary Sulfate Aerosol Formation in Nocturnal Power Plant Plumes in the Southeast US. <i>ACS Earth and Space Chemistry</i> , 2019, 3, 748-759.	2.7	16
100	Inorganic and black carbon aerosols in the Los Angeles Basin during CalNex. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 1777-1803.	3.3	15
101	Wintertime spatial distribution of ammonia and its emission sources in the Great Salt Lake region. <i>Atmospheric Chemistry and Physics</i> , 2019, 19, 15691-15709.	4.9	15
102	Formation and growth of organic aerosols downwind of the Deepwater Horizon oil spill. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	4.0	14
103	Modeling the diurnal variability of agricultural ammonia in Bakersfield, California, during the CalNex campaign. <i>Atmospheric Chemistry and Physics</i> , 2017, 17, 2721-2739.	4.9	14
104	Coupled Air Quality and Boundary-Layer Meteorology in Western U.S. Basins during Winter: Design and Rationale for a Comprehensive Study. <i>Bulletin of the American Meteorological Society</i> , 2021, 102, E2012-E2033.	3.3	14
105	Drivers of cloud droplet number variability in the summertime in the southeastern United States. <i>Atmospheric Chemistry and Physics</i> , 2020, 20, 12163-12176.	4.9	12
106	Studies of interfacial composition of TiN films formed by plasma-assisted chemical vapor deposition using an in situ scratching device. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1986, 4, 2797-2800.	2.1	11
107	Complex refractive indices in the ultraviolet and visible spectral region for highly absorbing non-spherical biomass burning aerosol. <i>Atmospheric Chemistry and Physics</i> , 2021, 21, 7235-7252.	4.9	11
108	Novel Analysis to Quantify Plume Crosswind Heterogeneity Applied to Biomass Burning Smoke. <i>Environmental Science & Technology</i> , 2021, 55, 15646-15657.	10.0	11

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109	Single-particle measurements of bouncing particles and in situ collection efficiency from an airborne aerosol mass spectrometer (AMS) with light-scattering detection. Atmospheric Measurement Techniques, 2017, 10, 3801-3820.	3.1	10
110	Complexity in the Evolution, Composition, and Spectroscopy of Brown Carbon in Aircraft Measurements of Wildfire Plumes. Geophysical Research Letters, 2022, 49, .	4.0	10
111	The role of coarse aerosol particles as a sink of HNO ₃ in wintertime pollution events in the Salt Lake Valley. Atmospheric Chemistry and Physics, 2021, 21, 8111-8126.	4.9	9
112	Los Angeles Basin airborne organic aerosol characterization during CalNex. Journal of Geophysical Research D: Atmospheres, 2013, 118, 11,453.	3.3	8
113	Corrigendum to "In situ vertical profiles of aerosol extinction, mass, and composition over the southeast United States during SENEX and SEAC ⁴ RS: observations of a modest aerosol enhancement aloft" published in Atmos. Chem. Phys., 15, 7085-7102, 2015. Atmospheric Chemistry and Physics, 2015, 15, 8455-8455.	4.9	1
114	Limited impact of sulfate-driven chemistry on black carbon aerosol aging in power plant plumes. AIMS Environmental Science, 2018, 5, 195-215.	1.4	1
115	Spectroscopic Studies of PSCs. , 1994, , 329-349.		0