

Ann M Middlebrook

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125
papers

15,767
citations

55
h-index

125
g-index

155
ext. papers

17,601
ext. citations

7.2
avg, IF

5.63
L-index

#	Paper	IF	Citations
125	Evolution of organic aerosols in the atmosphere. <i>Science</i> , 2009 , 326, 1525-9	33.3	2767
124	Ubiquity and dominance of oxygenated species in organic aerosols in anthropogenically-influenced Northern Hemisphere midlatitudes. <i>Geophysical Research Letters</i> , 2007 , 34, n/a-n/a	4.9	1497
123	Chemical and microphysical characterization of ambient aerosols with the aerodyne aerosol mass spectrometer. <i>Mass Spectrometry Reviews</i> , 2007 , 26, 185-222	11	1443
122	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	4.3	615
121	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,		590
120	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	3.4	578
119	A large atomic chlorine source inferred from mid-continental reactive nitrogen chemistry. <i>Nature</i> , 2010 , 464, 271-4	50.4	471
118	Single-particle mass spectrometry of tropospheric aerosol particles. <i>Journal of Geophysical Research</i> , 2006 , 111,		389
117	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, 14802-7	11.5	324
116	Influence of sea-salt on aerosol radiative properties in the Southern Ocean marine boundary layer. <i>Nature</i> , 1998 , 392, 62-65	50.4	312
115	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	3.4	302
114	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		276
113	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, n/a-n/a	4.9	249
112	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	6.8	217
111	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	6.8	199
110	Transport of Asian ozone pollution into surface air over the western United States in spring. <i>Journal of Geophysical Research</i> , 2012 , 117, n/a-n/a		196
109	Organic aerosol formation in urban and industrial plumes near Houston and Dallas, Texas. <i>Journal of Geophysical Research</i> , 2009 , 114,		196

108	Gasoline emissions dominate over diesel in formation of secondary organic aerosol mass. <i>Geophysical Research Letters</i> , 2012 , 39, n/a-n/a	4.9	163
107	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, n/a-n/a		159
106	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,		158
105	An important contribution to springtime Arctic aerosol from biomass burning in Russia. <i>Geophysical Research Letters</i> , 2010 , 37, n/a-n/a	4.9	155
104	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		148
103	Organic aerosol formation downwind from the Deepwater Horizon oil spill. <i>Science</i> , 2011 , 331, 1295-9	33.3	138
102	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	6.8	115
101	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		114
100	Nighttime removal of NO _x in the summer marine boundary layer. <i>Geophysical Research Letters</i> , 2004 , 31, n/a-n/a	4.9	112
99	Direct observations of N ₂ O ₅ reactivity on ambient aerosol particles. <i>Geophysical Research Letters</i> , 2009 , 36,	4.9	109
98	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	3.4	109
97	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,		104
96	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		100
95	Ammonia sources in the California South Coast Air Basin and their impact on ammonium nitrate formation. <i>Geophysical Research Letters</i> , 2012 , 39, n/a-n/a	4.9	97
94	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		96
93	Impact of fuel quality regulation and speed reductions on shipping emissions: implications for climate and air quality. <i>Environmental Science & Technology</i> , 2011 , 45, 9052-60	10.3	95
92	Understanding the role of the ground surface in HONO vertical structure: High resolution vertical profiles during NACHTT-11. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013 , 118, 10,155-10,171	4.4	91
91	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	4.9	91

90	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		90
89	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. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013 , 118, 8702-8715	4.4	81
88	Airborne observations of ammonia and ammonium nitrate formation over Houston, Texas. <i>Journal of Geophysical Research</i> , 2010 , 115,		80
87	Kinetics of ethane oxidation on vanadium oxide. <i>The Journal of Physical Chemistry</i> , 1990 , 94, 5029-5033		79
86	A comparison of particle mass spectrometers during the 1999 Atlanta Supersite Project. <i>Journal of Geophysical Research</i> , 2003 , 108,		78
85	Brown carbon absorption linked to organic mass tracers in biomass burning particles. <i>Atmospheric Chemistry and Physics</i> , 2013 , 13, 2415-2422	6.8	75
84	Airborne cloud condensation nuclei measurements during the 2006 Texas Air Quality Study. <i>Journal of Geophysical Research</i> , 2011 , 116,		75
83	Hygroscopicity and composition of Alaskan Arctic CCN during April 2008. <i>Atmospheric Chemistry and Physics</i> , 2011 , 11, 11807-11825	6.8	73
82	N ₂ O ₅ uptake coefficients and nocturnal NO ₂ removal rates determined from ambient wintertime measurements. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013 , 118, 9331-9350	4.4	72
81	Aerosol optical properties in the southeastern United States in summer [Part I]: Hygroscopic growth. <i>Atmospheric Chemistry and Physics</i> , 2016 , 16, 4987-5007	6.8	71
80	In situ single-particle characterization at Cape Grim. <i>Journal of Geophysical Research</i> , 1998 , 103, 16485-16491		71
79	Cluster Analysis of Data from the Particle Analysis by Laser Mass Spectrometry (PALMS) Instrument. <i>Aerosol Science and Technology</i> , 2003 , 37, 382-391	3.4	69
78	Thresholds for Laser-Induced Ion Formation from Aerosols in a Vacuum Using Ultraviolet and Vacuum-Ultraviolet Laser Wavelengths. <i>Aerosol Science and Technology</i> , 1997 , 26, 544-559	3.4	67
77	Nocturnal odd-oxygen budget and its implications for ozone loss in the lower troposphere. <i>Geophysical Research Letters</i> , 2006 , 33,	4.9	66
76	Absorbing aerosol in the troposphere of the Western Arctic during the 2008 ARCTAS/ARCPAC airborne field campaigns. <i>Atmospheric Chemistry and Physics</i> , 2011 , 11, 7561-7582	6.8	60
75	Air quality implications of the Deepwater Horizon oil spill. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, 20280-5	11.5	59
74	Hygroscopicity and composition of California CCN during summer 2010. <i>Journal of Geophysical Research</i> , 2012 , 117, n/a-n/a		59
73	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		58

72	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	4.4	57
71	Bromine, iodine, and chlorine in single aerosol particles at Cape Grim. <i>Geophysical Research Letters</i> , 1997 , 24, 3197-3200	4.9	55
70	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,		55
69	Fourier transform infrared studies of the interaction of HCl with model polar stratospheric cloud films. <i>Journal of Geophysical Research</i> , 1993 , 98, 10563		55
68	Distribution of lead in single atmospheric particles. <i>Atmospheric Chemistry and Physics</i> , 2007 , 7, 3195-3210	4.8	51
67	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		51
66	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	4	50
65	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	6.8	49
64	In situ vertical profiles of aerosol extinction, mass, and composition over the southeast United States during SENEX and SEAC&sup>4&sup>;RS: observations of a modest aerosol enhancement aloft. <i>Atmospheric Chemistry and Physics</i> , 2015 , 15, 7085-7102	6.8	46
63	An Odd Oxygen Framework for Wintertime Ammonium Nitrate Aerosol Pollution in Urban Areas: NOx and VOC Control as Mitigation Strategies. <i>Geophysical Research Letters</i> , 2019 , 46, 4971-4979	4.9	45
62	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	3.4	45
61	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	6.8	44
60	An evaluation of global organic aerosol schemes using airborne observations. <i>Atmospheric Chemistry and Physics</i> , 2020 , 20, 2637-2665	6.8	44
59	Evolution of aerosol properties impacting visibility and direct climate forcing in an ammonia-rich urban environment. <i>Journal of Geophysical Research</i> , 2012 , 117, n/a-n/a		43
58	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		43
57	Anthropogenic enhancements to production of highly oxygenated molecules from autoxidation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 6641-6646	11.5	42
56	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,		41
55	Overview of the 1999 Atlanta Supersite Project. <i>Journal of Geophysical Research</i> , 2003 , 108,		40

54	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, 11,137-11,153	4.4	38
53	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, 8025-34	10.3	38
52	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	4.4	38
51	Design and Performance of a Pumped Counterflow Virtual Impactor. <i>Aerosol Science and Technology</i> , 2006 , 40, 969-976	3.4	37
50	Growth of nitric acid hydrates on thin sulfuric acid films. <i>Geophysical Research Letters</i> , 1994 , 21, 867-870	4.9	37
49	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	6.8	36
48	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	6.8	33
47	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	3.4	33
46	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	4.4	31
45	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	6.8	30
44	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, 3093-100	10.3	30
43	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	4	30
42	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	2.8	29
41	Evaluating N ₂ O ₅ heterogeneous hydrolysis parameterizations for CalNex 2010. <i>Journal of Geophysical Research D: Atmospheres</i> , 2016 , 121, 5051-5070	4.4	26
40	Evaporation studies of model polar stratospheric cloud films. <i>Geophysical Research Letters</i> , 1996 , 23, 2145-2148	4.9	26
39	Formation of model polar stratospheric cloud films. <i>Geophysical Research Letters</i> , 1992 , 19, 2417-2420	4.9	26
38	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	4.9	25
37	Spectroscopic studies of model polar stratospheric cloud films. <i>Spectrochimica Acta Part A: Molecular Spectroscopy</i> , 1992 , 48, 1303-1313		24

36	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	3.4	22
35	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	6.8	18
34	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	6.8	17
33	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, 13,591-13,605	4.4	15
32	Airborne measurements of the atmospheric emissions from a fuel ethanol refinery. <i>Journal of Geophysical Research D: Atmospheres</i> , 2015 , 120, 4385-4397	4.4	14
31	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	4	13
30	Inorganic and black carbon aerosols in the Los Angeles Basin during CalNex. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013 , 118, 1777-1803	4.4	13
29	Formation and growth of organic aerosols downwind of the Deepwater Horizon oil spill. <i>Geophysical Research Letters</i> , 2011 , 38, n/a-n/a	4.9	13
28	Modeling the diurnal variability of agricultural ammonia in Bakersfield, California, during the CalNex campaign. <i>Atmospheric Chemistry and Physics</i> , 2017 , 17, 2721-2739	6.8	11
27	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	2.9	11
26	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	6.8	11
25	Characteristics, sources, and transport of aerosols measured in spring 2008 during the aerosol, radiation, and cloud processes affecting Arctic climate (ARCPAC) project		9
24	Variability and Time of Day Dependence of Ozone Photochemistry in Western Wildfire Plumes. <i>Environmental Science & Technology</i> , 2021 , 55, 10280-10290	10.3	9
23	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	3.2	8
22	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	6.8	8
21	Single-particle measurements of bouncing particles and in situ collection efficiency from an airborne aerosol mass spectrometer (AMS) with light-scattering detection. <i>Atmospheric Measurement Techniques</i> , 2017 , 10, 3801-3820	4	7
20	Los Angeles Basin airborne organic aerosol characterization during CalNex. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013 , 118, 11,453-11,467	4.4	7
19	Chemical transport models often underestimate inorganic aerosol acidity in remote regions of the atmosphere. <i>Communications Earth & Environment</i> , 2021 , 2,	6.1	7

18	Exploring the vertical profile of atmospheric organic aerosol: comparing 17 aircraft field campaigns with a global model		6
17	Aerosol optical properties in the southeastern United States in summer [Part 2: Sensitivity of aerosol optical depth to relative humidity and aerosol parameters		6
16	Instrumentation and Measurement Strategy for the NOAA SENEX Aircraft Campaign as Part of the Southeast Atmosphere Study 2013		6
15	Aerosol optical properties in the southeastern United States in summer [Part 1: Hygroscopic growth		5
14	An evaluation of global organic aerosol schemes using airborne observations 2019 ,		4
13	Wintertime Spatial Distribution of Ammonia and its Emission Sources in the Great Salt Lake Region 2019 ,		3
12	Drivers of cloud droplet number variability in the summertime in the southeastern United States. <i>Atmospheric Chemistry and Physics</i> , 2020 , 20, 12163-12176	6.8	3
11	A new method to quantify mineral dust and other aerosol species from aircraft platforms using single particle mass spectrometry		3
10	The role of coarse aerosol particles as a sink of HNO ₃ in wintertime pollution events in the Salt Lake Valley. <i>Atmospheric Chemistry and Physics</i> , 2021 , 21, 8111-8126	6.8	3
9	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 , 1-94	6.1	3
8	Novel Analysis to Quantify Plume Crosswind Heterogeneity Applied to Biomass Burning Smoke. <i>Environmental Science & Technology</i> , 2021 , 55, 15646-15657	10.3	2
7	Distribution of lead in single atmospheric particles		2
6	Complexity in the evolution, composition, and spectroscopy of brown carbon in aircraft measurements of wildfire plumes. <i>Geophysical Research Letters</i> ,	4.9	2
5	Modeling the Diurnal Variability of Agricultural Ammonia in Bakersfield, California during CalNex 2016 ,		1
4	Limited impact of sulfate-driven chemistry on black carbon aerosol aging in power plant plumes. <i>AIMS Environmental Science</i> , 2018 , 5, 195-215	1.9	1
3	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		1
2	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	6.8	1
1	Spectroscopic Studies of PSCs 1994 , 329-349		

