Ann M Middlebrook

List of Publications by Year in Descending Order

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	Nighttime and daytime dark oxidation chemistry in wildfire plumes: an observation and model analysis of FIREX-AQ aircraft data. *Atmospheric Chemistry and Physics*, **2021**, 21, 16293-16317	6.8	8
124	Novel Analysis to Quantify Plume Crosswind Heterogeneity Applied to Biomass Burning Smoke. *Environmental Science & Technology*, **2021**, 55, 15646-15657	10.3	2
123	The role of coarse aerosol particles as a sink of HNO₃ in wintertime pollution events in the Salt Lake Valley. *Atmospheric Chemistry and Physics*, **2021**, 21, 8111-8126	6.8	3
122	Chemical transport models often underestimate inorganic aerosol acidity in remote regions of the atmosphere. *Communications Earth & Environment*, **2021**, 2,	6.1	7
121	Complex refractive indices in the ultraviolet and visible spectral region for highly absorbing non-spherical biomass burning aerosol. *Atmospheric Chemistry and Physics*, **2021**, 21, 7235-7252	6.8	1
120	Coupled Air Quality and Boundary-Layer Meteorology in Western U.S. Basins during Winter: Design and Rationale for a Comprehensive Study. *Bulletin of the American Meteorological Society*, **2021**, 1-94	6.1	3
119	Variability and Time of Day Dependence of Ozone Photochemistry in Western Wildfire Plumes. *Environmental Science & Technology*, **2021**, 55, 10280-10290	10.3	9
118	Drivers of cloud droplet number variability in the summertime in the southeastern United States. *Atmospheric Chemistry and Physics*, **2020**, 20, 12163-12176	6.8	3
117	An evaluation of global organic aerosol schemes using airborne observations. *Atmospheric Chemistry and Physics*, **2020**, 20, 2637-2665	6.8	44
116	On the contribution of nocturnal heterogeneous reactive nitrogen chemistry to particulate matter formation during wintertime pollution events in Northern Utah. *Atmospheric Chemistry and Physics*, **2019**, 19, 9287-9308	6.8	17
115	Wintertime Spatial Distribution of Ammonia and its Emission Sources in the Great Salt Lake Region **2019**,		3
114	An evaluation of global organic aerosol schemes using airborne observations **2019**,		4
113	Evidence in biomass burning smoke for a light-absorbing aerosol with properties intermediate between brown and black carbon. *Aerosol Science and Technology*, **2019**, 53, 976-989	3.4	22
112	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	11.5	42
111	Role of Criegee Intermediates in Secondary Sulfate Aerosol Formation in Nocturnal Power Plant Plumes in the Southeast US. *ACS Earth and Space Chemistry*, **2019**, 3, 748-759	3.2	8
110	An Odd Oxygen Framework for Wintertime Ammonium Nitrate Aerosol Pollution in Urban Areas: NOx and VOC Control as Mitigation Strategies. *Geophysical Research Letters*, **2019**, 46, 4971-4979	4.9	45
109	Wintertime spatial distribution of ammonia and its emission sources in the Great Salt Lake region. *Atmospheric Chemistry and Physics*, **2019**, 19, 15691-15709	6.8	11

108	A new method to quantify mineral dust and other aerosol species from aircraft platforms using single-particle mass spectrometry. *Atmospheric Measurement Techniques*, **2019**, 12, 6209-6239	4	30
107	Secondary organic aerosol (SOA) yields from NO₃ radical + isoprene based on nighttime aircraft power plant plume transects. *Atmospheric Chemistry and Physics*, **2018**, 18, 11663-11682	6.8	30
106	Characterization of a catalyst-based conversion technique to measure total particulate nitrogen and organic carbon and comparison to a particle mass measurement instrument. *Atmospheric Measurement Techniques*, **2018**, 11, 2749-2768	4	13
105	Limited impact of sulfate-driven chemistry on black carbon aerosol aging in power plant plumes. *AIMS Environmental Science*, **2018**, 5, 195-215	1.9	1
104	Airborne and ground-based observations of ammonium-nitrate-dominated aerosols in a shallow boundary layer during intense winter pollution episodes in northern Utah. *Atmospheric Chemistry and Physics*, **2018**, 18, 17259-17276	6.8	18
103	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	4	7
102	Modeling the diurnal variability of agricultural ammonia in Bakersfield, California, during the CalNex campaign. *Atmospheric Chemistry and Physics*, **2017**, 17, 2721-2739	6.8	11
101	Modeling the Diurnal Variability of Agricultural Ammonia in Bakersfield, California during CalNex **2016**,		1
100	Enhanced formation of isoprene-derived organic aerosol in sulfur-rich power plant plumes during Southeast Nexus. *Journal of Geophysical Research D: Atmospheres*, **2016**, 121, 11,137-11,153	4.4	38
99	Aerosol optical properties in the southeastern United States in summer □Part□1: Hygroscopic growth. *Atmospheric Chemistry and Physics*, **2016**, 16, 4987-5007	6.8	71
98	Aerosol optical properties in the southeastern United States in summer □Part□2: Sensitivity of aerosol optical depth to relative humidity and aerosol parameters. *Atmospheric Chemistry and Physics*, **2016**, 16, 5009-5019	6.8	33
97	Comment on □The effects of molecular weight and thermal decomposition on the sensitivity of a thermal desorption aerosol mass spectrometer□*Aerosol Science and Technology*, **2016**, 50, i-xv	3.4	33
96	Evaluating N2O5 heterogeneous hydrolysis parameterizations for CalNex 2010. *Journal of Geophysical Research D: Atmospheres*, **2016**, 121, 5051-5070	4.4	26
95	Instrumentation and Measurement Strategy for the NOAA SENEX Aircraft Campaign as Part of the Southeast Atmosphere Study 2013. *Atmospheric Measurement Techniques*, **2016**, 9, 3063-3093	4	50
94	Observational constraints on glyoxal production from isoprene oxidation and its contribution to organic aerosol over the Southeast United States. *Journal of Geophysical Research D: Atmospheres*, **2016**, 121, 9849-9861	4.4	38
93	Airborne measurements of the atmospheric emissions from a fuel ethanol refinery. *Journal of Geophysical Research D: Atmospheres*, **2015**, 120, 4385-4397	4.4	14
92	In situ vertical profiles of aerosol extinction, mass, and composition over the southeast United States during SENEX and SEAC⁴RS: observations of a modest aerosol enhancement aloft. *Atmospheric Chemistry and Physics*, **2015**, 15, 7085-7102	6.8	46
91	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. *Atmospheric Chemistry and Physics*, **2014**, 14, 10013-10060	6.8	49

90	New insights into atmospheric sources and sinks of isocyanic acid, HNCO, from recent urban and regional observations. *Journal of Geophysical Research D: Atmospheres*, **2014**, 119, 1060-1072	4.4	31
89	N2O5 uptake coefficients and nocturnal NO2 removal rates determined from ambient wintertime measurements. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 9331-9350	4.4	72
88	Understanding the role of the ground surface in HONO vertical structure: High resolution vertical profiles during NACHTT-11. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 10,155-10,171	4.4	91
87	Los Angeles Basin airborne organic aerosol characterization during CalNex. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 11,453-11,467	4.4	7
86	Biogenic VOC oxidation and organic aerosol formation in an urban nocturnal boundary layer: aircraft vertical profiles in Houston, TX. *Atmospheric Chemistry and Physics*, **2013**, 13, 11317-11337	6.8	44
85	Brown carbon absorption linked to organic mass tracers in biomass burning particles. *Atmospheric Chemistry and Physics*, **2013**, 13, 2415-2422	6.8	75
84	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. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 8067-8085	4.4	57
83	Chlorine activation within urban or power plant plumes: Vertically resolved ClNO2 and Cl2 measurements from a tall tower in a polluted continental setting. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 8702-8715	4.4	81
82	Inorganic and black carbon aerosols in the Los Angeles Basin during CalNex. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 1777-1803	4.4	13
81	Vertically resolved chemical characteristics and sources of submicron aerosols measured on a Tall Tower in a suburban area near Denver, Colorado in winter. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 13,591-13,605	4.4	15
80	Air quality implications of the Deepwater Horizon oil spill. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 20280-5	11.5	59
79	CCN spectra, hygroscopicity, and droplet activation kinetics of secondary organic aerosol resulting from the 2010 Deepwater Horizon oil spill. *Environmental Science & Technology*, **2012**, 46, 3093-100	10.3	30
78	Mass spectral analysis of organic aerosol formed downwind of the Deepwater Horizon oil spill: field studies and laboratory confirmations. *Environmental Science & Technology*, **2012**, 46, 8025-34	10.3	38
77	Gasoline emissions dominate over diesel in formation of secondary organic aerosol mass. *Geophysical Research Letters*, **2012**, 39, n/a-n/a	4.9	163
76	A volatility basis set model for summertime secondary organic aerosols over the eastern United States in 2006. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		159
75	Transport of Asian ozone pollution into surface air over the western United States in spring. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		196
74	Evolution of aerosol properties impacting visibility and direct climate forcing in an ammonia-rich urban environment. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		43
73	Hygroscopicity and composition of California CCN during summer 2010. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		59

72	Ammonia sources in the California South Coast Air Basin and their impact on ammonium nitrate formation. *Geophysical Research Letters*, **2012**, 39, n/a-n/a	4.9	97
71	Brown carbon and internal mixing in biomass burning particles. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 14802-7	11.5	324
70	Evaluation of Composition-Dependent Collection Efficiencies for the Aerodyne Aerosol Mass Spectrometer using Field Data. *Aerosol Science and Technology*, **2012**, 46, 258-271	3.4	578
69	Airborne cloud condensation nuclei measurements during the 2006 Texas Air Quality Study. *Journal of Geophysical Research*, **2011**, 116,		75
68	Atmospheric emissions from the Deepwater Horizon spill constrain air-water partitioning, hydrocarbon fate, and leak rate. *Geophysical Research Letters*, **2011**, 38, n/a-n/a	4.9	91
67	Characteristics of black carbon aerosol from a surface oil burn during the Deepwater Horizon oil spill. *Geophysical Research Letters*, **2011**, 38, n/a-n/a	4.9	25
66	Formation and growth of organic aerosols downwind of the Deepwater Horizon oil spill. *Geophysical Research Letters*, **2011**, 38, n/a-n/a	4.9	13
65	Organic aerosol formation downwind from the Deepwater Horizon oil spill. *Science*, **2011**, 331, 1295-9	33.3	138
64	Characteristics, sources, and transport of aerosols measured in spring 2008 during the aerosol, radiation, and cloud processes affecting Arctic Climate (ARCPAC) Project. *Atmospheric Chemistry and Physics*, **2011**, 11, 2423-2453	6.8	217
63	Hygroscopicity and composition of Alaskan Arctic CCN during April 2008. *Atmospheric Chemistry and Physics*, **2011**, 11, 11807-11825	6.8	73
62	Exploring the vertical profile of atmospheric organic aerosol: comparing 17 aircraft field campaigns with a global model. *Atmospheric Chemistry and Physics*, **2011**, 11, 12673-12696	6.8	199
61	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	6.8	60
60	Impact of fuel quality regulation and speed reductions on shipping emissions: implications for climate and air quality. *Environmental Science & Technology*, **2011**, 45, 9052-60	10.3	95
59	A large atomic chlorine source inferred from mid-continental reactive nitrogen chemistry. *Nature*, **2010**, 464, 271-4	50.4	471
58	Airborne observations of ammonia and ammonium nitrate formation over Houston, Texas. *Journal of Geophysical Research*, **2010**, 115,		80
57	An important contribution to springtime Arctic aerosol from biomass burning in Russia. *Geophysical Research Letters*, **2010**, 37, n/a-n/a	4.9	155
56	Direct observations of N2O5 reactivity on ambient aerosol particles. *Geophysical Research Letters*, **2009**, 36,	4.9	109
55	Evolution of organic aerosols in the atmosphere. *Science*, **2009**, 326, 1525-9	33.3	2767

54	Organic aerosol formation in urban and industrial plumes near Houston and Dallas, Texas. *Journal of Geophysical Research*, **2009**, 114,		196
53	Reactive uptake coefficients for N2O5 determined from aircraft measurements during the Second Texas Air Quality Study: Comparison to current model parameterizations. *Journal of Geophysical Research*, **2009**, 114,		104
52	Biomass burning in Siberia and Kazakhstan as an important source for haze over the Alaskan Arctic in April 2008. *Geophysical Research Letters*, **2009**, 36, n/a-n/a	4.9	249
51	Sources of particulate matter in the northeastern United States in summer: 2. Evolution of chemical and microphysical properties. *Journal of Geophysical Research*, **2008**, 113,		41
50	Sources of particulate matter in the northeastern United States in summer: 1. Direct emissions and secondary formation of organic matter in urban plumes. *Journal of Geophysical Research*, **2008**, 113,		158
49	Collection Efficiencies in an Aerodyne Aerosol Mass Spectrometer as a Function of Particle Phase for Laboratory Generated Aerosols. *Aerosol Science and Technology*, **2008**, 42, 884-898	3.4	302
48	Design and Operation of a Pressure-Controlled Inlet for Airborne Sampling with an Aerodynamic Aerosol Lens. *Aerosol Science and Technology*, **2008**, 42, 465-471	3.4	109
47	Chemical and microphysical characterization of ambient aerosols with the aerodyne aerosol mass spectrometer. *Mass Spectrometry Reviews*, **2007**, 26, 185-222	11	1443
46	Distribution of lead in single atmospheric particles. *Atmospheric Chemistry and Physics*, **2007**, 7, 3195-3210	4.88	51
45	Ubiquity and dominance of oxygenated species in organic aerosols in anthropogenically-influenced Northern Hemisphere midlatitudes. *Geophysical Research Letters*, **2007**, 34, n/a-n/a	4.9	1497
44	Design and Performance of a Pumped Counterflow Virtual Impactor. *Aerosol Science and Technology*, **2006**, 40, 969-976	3.4	37
43	Single-particle mass spectrometry of tropospheric aerosol particles. *Journal of Geophysical Research*, **2006**, 111,		389
42	Nocturnal odd-oxygen budget and its implications for ozone loss in the lower troposphere. *Geophysical Research Letters*, **2006**, 33,	4.9	66
41	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. *Atmospheric Chemistry and Physics*, **2006**, 6, 5649-5666	6.8	36
40	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. *Atmospheric Chemistry and Physics*, **2006**, 6, 1657-1732	6.8	115
39	Budget of organic carbon in a polluted atmosphere: Results from the New England Air Quality Study in 2002. *Journal of Geophysical Research*, **2005**, 110,		590
38	Dominance of organic aerosols in the marine boundary layer over the Gulf of Maine during NEAQS 2002 and their role in aerosol light scattering. *Journal of Geophysical Research*, **2005**, 110,		55
37	Nighttime removal of NOx in the summer marine boundary layer. *Geophysical Research Letters*, **2004**, 31, n/a-n/a	4.9	112

36	A generalised method for the extraction of chemically resolved mass spectra from Aerodyne aerosol mass spectrometer data. *Journal of Aerosol Science*, **2004**, 35, 909-922	4.3	615
35	A comparison of particle mass spectrometers during the 1999 Atlanta Supersite Project. *Journal of Geophysical Research*, **2003**, 108,		78
34	Nitrate and oxidized organic ions in single particle mass spectra during the 1999 Atlanta Supersite Project. *Journal of Geophysical Research*, **2003**, 108, SOS 5-1		58
33	Overview of the 1999 Atlanta Supersite Project. *Journal of Geophysical Research*, **2003**, 108,		40
32	Cluster Analysis of Data from the Particle Analysis by Laser Mass Spectrometry (PALMS) Instrument. *Aerosol Science and Technology*, **2003**, 37, 382-391	3.4	69
31	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. *Journal of Geophysical Research*, **2002**, 107, AAC 1-1		96
30	Influence of sea-salt on aerosol radiative properties in the Southern Ocean marine boundary layer. *Nature*, **1998**, 392, 62-65	50.4	312
29	In situ single-particle characterization at Cape Grim. *Journal of Geophysical Research*, **1998**, 103, 16485-16491		71
28	Observations of organic material in individual marine particles at Cape Grim during the First Aerosol Characterization Experiment (ACE 1). *Journal of Geophysical Research*, **1998**, 103, 16475-16483		276
27	On the Purity of Laboratory-Generated Sulfuric Acid Droplets and Ambient Particles Studied by Laser Mass Spectrometry. *Aerosol Science and Technology*, **1997**, 27, 293-307	3.4	45
26	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	3.4	67
25	Crystallization Kinetics of HNO3/H2O Films Representative of Polar Stratospheric Clouds. *Journal of Physical Chemistry A*, **1997**, 101, 2112-2119	2.8	29
24	Bromine, iodine, and chlorine in single aerosol particles at Cape Grim. *Geophysical Research Letters*, **1997**, 24, 3197-3200	4.9	55
23	Evaporation studies of model polar stratospheric cloud films. *Geophysical Research Letters*, **1996**, 23, 2145-2148	4.9	26
22	Laboratory studies of the formation of polar stratospheric clouds: Nitric acid condensation on thin sulfuric acid films. *Journal of Geophysical Research*, **1995**, 100, 20969		43
21	Growth of nitric acid hydrates on thin sulfuric acid films. *Geophysical Research Letters*, **1994**, 21, 867-870	4.9	37
20	Infrared optical constants of H2O ice, amorphous nitric acid solutions, and nitric acid hydrates. *Journal of Geophysical Research*, **1994**, 99, 25631		148
19	Real refractive indices of infrared-characterized nitric-acid/ice films: Implications for optical measurements of polar stratospheric clouds. *Journal of Geophysical Research*, **1994**, 99, 25655		51

18	Spectroscopic Studies of PSCs **1994**, 329-349		
17	Fourier transform infrared studies of the interaction of HCl with model polar stratospheric cloud films. *Journal of Geophysical Research*, **1993**, 98, 10563		55
16	Fourier transform-infrared studies of thin H2SO4/H2O films: Formation, water uptake, and solid-liquid phase changes. *Journal of Geophysical Research*, **1993**, 98, 20473		90
15	Characterization of model polar stratospheric cloud films using Fourier transform infrared spectroscopy and temperature programmed desorption. *Journal of Geophysical Research*, **1992**, 97, 8065		114
14	Formation of model polar stratospheric cloud films. *Geophysical Research Letters*, **1992**, 19, 2417-2420	4.9	26
13	Spectroscopic studies of model polar stratospheric cloud films. *Spectrochimica Acta Part A: Molecular Spectroscopy*, **1992**, 48, 1303-1313		24
12	Fourier transform infrared studies of model polar stratospheric cloud surfaces: Growth and evaporation of ice and nitric acid/ice. *Journal of Geophysical Research*, **1990**, 95, 22423		100
11	Kinetics of ethane oxidation on vanadium oxide. *The Journal of Physical Chemistry*, **1990**, 94, 5029-5033		79
10	Studies of interfacial composition of TiN films formed by plasma-assisted chemical vapor deposition using an in situ scratching device. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1986**, 4, 2797-2800	2.9	11
9	Characteristics, sources, and transport of aerosols measured in spring 2008 during the aerosol, radiation, and cloud processes affecting Arctic climate (ARCPAC) project		9
8	Exploring the vertical profile of atmospheric organic aerosol: comparing 17 aircraft field campaigns with a global model		6
7	Aerosol optical properties in the southeastern United States in summer Part 1: Hygroscopic growth		5
6	In situ vertical profiles of aerosol extinction, mass, and composition over the southeast United States during SENEX and SEAC⁴RS: observations of a modest aerosol enhancement aloft		1
5	Aerosol optical properties in the southeastern United States in summer Part 2: Sensitivity of aerosol optical depth to relative humidity and aerosol parameters		6
4	Distribution of lead in single atmospheric particles		2
3	Instrumentation and Measurement Strategy for the NOAA SENEX Aircraft Campaign as Part of the Southeast Atmosphere Study 2013		6
2	A new method to quantify mineral dust and other aerosol species from aircraft platforms using single particle mass spectrometry		3
1	Complexity in the evolution, composition, and spectroscopy of brown carbon in aircraft measurements of wildfire plumes. *Geophysical Research Letters*,	4.9	2