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	Complexity in the Evolution, Composition, and Spectroscopy of Brown Carbon in Aircraft Measurements of Wildfire Plumes. Geophysical Research Letters, 2022, 49, .	4.0	10
2	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.	4.9	9
3	Chemical transport models often underestimate inorganic aerosol acidity in remote regions of the atmosphere. Communications Earth & Environment, 2021, 2, .	6.8	32
4	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.	4.9	11
5	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, 102, E2012-E2033.	3.3	14
6	Variability and Time of Day Dependence of Ozone Photochemistry in Western Wildfire Plumes. Environmental Science & Technology, 2021, 55, 10280-10290.	10.0	31
7	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.	4.9	34
8	Novel Analysis to Quantify Plume Crosswind Heterogeneity Applied to Biomass Burning Smoke. Environmental Science & Technology, 2021, 55, 15646-15657.	10.0	11
9	Drivers of cloud droplet number variability in the summertime in the southeastern United States. Atmospheric Chemistry and Physics, 2020, 20, 12163-12176.	4.9	12
10	An evaluation of global organic aerosol schemes using airborne observations. Atmospheric Chemistry and Physics, 2020, 20, 2637-2665.	4.9	90
11	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.	4.9	33
12	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.	3.1	37
13	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
14	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.	2.7	16
15	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
16	Wintertime spatial distribution of ammonia and its emission sources in the Great Salt Lake region. Atmospheric Chemistry and Physics, 2019, 19, 15691-15709.	4.9	15
17	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.	3.1	55
18	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.	4.9	33

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19	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.	4.9	47
20	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.	3.1	21
21	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
22	Modeling the diurnal variability of agricultural ammonia in Bakersfield, California, during the CalNex campaign. Atmospheric Chemistry and Physics, 2017, 17, 2721-2739.	4.9	14
23	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
24	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.	3.1	58
25	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.	3.3	48
26	Enhanced formation of isopreneâ€derived organic aerosol in sulfurâ€rich power plant plumes during Southeast Nexus. Journal of Geophysical Research D: Atmospheres, 2016, 121, 11,137.	3.3	50
27	Aerosol optical properties in the southeastern United States in summer â€“ PartÂ1: Hygroscopic growth. Atmospheric Chemistry and Physics, 2016, 16, 4987-5007.	4.9	88
28	Aerosol optical properties in the southeastern United States in summer â€“ PartÂ2: Sensitivity of aerosol optical depth to relative humidity and aerosol parameters. Atmospheric Chemistry and Physics, 2016, 16, 5009-5019.	4.9	44
29	Comment on â€œThe effects of molecular weight and thermal decomposition on the sensitivity of a thermal desorption aerosol mass spectrometerâ€. Aerosol Science and Technology, 2016, 50, i-xv.	3.1	39
30	Evaluating N₂O₅ heterogeneous hydrolysis parameterizations for CalNex 2010. Journal of Geophysical Research D: Atmospheres, 2016, 121, 5051-5070.	3.3	33
31	Corrigendum to "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" published in Atmos. Chem. Phys., 15, 7085â€“7102, 2015. Atmospheric Chemistry and Physics, 2015, 15, 8455-8455.	4.9	1
32	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.	4.9	50
33	Airborne measurements of the atmospheric emissions from a fuel ethanol refinery. Journal of Geophysical Research D: Atmospheres, 2015, 120, 4385-4397.	3.3	16
34	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.	3.3	34
35	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.	4.9	62
36	N₂O₅ uptake coefficients and nocturnal NO₂ removal rates determined from ambient wintertime measurements. Journal of Geophysical Research D: Atmospheres, 2013, 118, 9331-9350.	3.3	87

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37	Understanding the role of the ground surface in HONO vertical structure: High resolution vertical profiles during NACHTTâ€1 1. Journal of Geophysical Research D: Atmospheres, 2013, 118, 10,155.	3.3	111
38	Los Angeles Basin airborne organic aerosol characterization during CalNex. Journal of Geophysical Research D: Atmospheres, 2013, 118, 11,453.	3.3	8
39	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.	4.9	51
40	Brown carbon absorption linked to organic mass tracers in biomass burning particles. Atmospheric Chemistry and Physics, 2013, 13, 2415-2422.	4.9	89
41	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.	3.3	68
42	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.	3.3	94
43	Inorganic and black carbon aerosols in the Los Angeles Basin during CalNex. Journal of Geophysical Research D: Atmospheres, 2013, 118, 1777-1803.	3.3	15
44	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.	3.3	18
45	Brown carbon and internal mixing in biomass burning particles. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 14802-14807.	7.1	394
46	Evaluation of Composition-Dependent Collection Efficiencies for the Aerodyne Aerosol Mass Spectrometer using Field Data. Aerosol Science and Technology, 2012, 46, 258-271.	3.1	699
47	Air quality implications of theDeepwater Horizonoil spill. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 20280-20285.	7.1	79
48	CCN Spectra, Hygroscopicity, and Droplet Activation Kinetics of Secondary Organic Aerosol Resulting from the 2010 Deepwater Horizon Oil Spill. Environmental Science & Technology, 2012, 46, 3093-3100.	10.0	32
49	Mass Spectral Analysis of Organic Aerosol Formed Downwind of the Deepwater Horizon Oil Spill: Field Studies and Laboratory Confirmations. Environmental Science & Technology, 2012, 46, 8025-8034.	10.0	45
50	Gasoline emissions dominate over diesel in formation of secondary organic aerosol mass. Geophysical Research Letters, 2012, 39, .	4.0	189
51	A volatility basis set model for summertime secondary organic aerosols over the eastern United States in 2006. Journal of Geophysical Research, 2012, 117, .	3.3	195
52	Transport of Asian ozone pollution into surface air over the western United States in spring. Journal of Geophysical Research, 2012, 117, .	3.3	218
53	Evolution of aerosol properties impacting visibility and direct climate forcing in an ammoniaâ€rich urban environment. Journal of Geophysical Research, 2012, 117, .	3.3	54
54	Hygroscopicity and composition of California CCN during summer 2010. Journal of Geophysical Research, 2012, 117, .	3.3	70

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55	Ammonia sources in the California South Coast Air Basin and their impact on ammonium nitrate formation. Geophysical Research Letters, 2012, 39, .	4.0	110
56	Impact of Fuel Quality Regulation and Speed Reductions on Shipping Emissions: Implications for Climate and Air Quality. Environmental Science & Technology, 2011, 45, 9052-9060.	10.0	115
57	Airborne cloud condensation nuclei measurements during the 2006 Texas Air Quality Study. Journal of Geophysical Research, 2011, 116, .	3.3	91
58	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.	4.0	107
59	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.	4.0	34
60	Formation and growth of organic aerosols downwind of the Deepwater Horizon oil spill. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	14
61	Organic Aerosol Formation Downwind from the Deepwater Horizon Oil Spill. Science, 2011, 331, 1295-1299.	12.6	162
62	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.	4.9	259
63	Hygroscopicity and composition of Alaskan Arctic CCN during April 2008. Atmospheric Chemistry and Physics, 2011, 11, 11807-11825.	4.9	85
64	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.	4.9	240
65	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
66	A large atomic chlorine source inferred from mid-continental reactive nitrogen chemistry. Nature, 2010, 464, 271-274.	27.8	562
67	Airborne observations of ammonia and ammonium nitrate formation over Houston, Texas. Journal of Geophysical Research, 2010, 115, .	3.3	91
68	An important contribution to springtime Arctic aerosol from biomass burning in Russia. Geophysical Research Letters, 2010, 37, .	4.0	172
69	Direct observations of N₂O₅ reactivity on ambient aerosol particles. Geophysical Research Letters, 2009, 36, .	4.0	124
70	Evolution of Organic Aerosols in the Atmosphere. Science, 2009, 326, 1525-1529.	12.6	3,374
71	Organic aerosol formation in urban and industrial plumes near Houston and Dallas, Texas. Journal of Geophysical Research, 2009, 114, .	3.3	230
72	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, .	3.3	124

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73	Biomass burning in Siberia and Kazakhstan as an important source for haze over the Alaskan Arctic in April 2008. Geophysical Research Letters, 2009, 36, .	4.0	289
74	Sources of particulate matter in the northeastern United States in summer: 2. Evolution of chemical and microphysical properties. Journal of Geophysical Research, 2008, 113, .	3.3	48
75	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, .	3.3	173
76	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.	3.1	340
77	Design and Operation of a Pressure-Controlled Inlet for Airborne Sampling with an Aerodynamic Aerosol Lens. Aerosol Science and Technology, 2008, 42, 465-471.	3.1	122
78	Distribution of lead in single atmospheric particles. Atmospheric Chemistry and Physics, 2007, 7, 3195-3210.	4.9	53
79	Ubiquity and dominance of oxygenated species in organic aerosols in anthropogenicallyâ€influenced Northern Hemisphere midlatitudes. Geophysical Research Letters, 2007, 34, .	4.0	1,773
80	Chemical and microphysical characterization of ambient aerosols with the aerodyne aerosol mass spectrometer. Mass Spectrometry Reviews, 2007, 26, 185-222.	5.4	1,708
81	Single-particle mass spectrometry of tropospheric aerosol particles. Journal of Geophysical Research, 2006, 111, .	3.3	442
82	Nocturnal odd-oxygen budget and its implications for ozone loss in the lower troposphere. Geophysical Research Letters, 2006, 33, .	4.0	75
83	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.	4.9	39
84	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.	4.9	135
85	Design and Performance of a Pumped Counterflow Virtual Impactor. Aerosol Science and Technology, 2006, 40, 969-976.	3.1	46
86	Budget of organic carbon in a polluted atmosphere: Results from the New England Air Quality Study in 2002. Journal of Geophysical Research, 2005, 110, .	3.3	689
87	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, .	3.3	61
88	Nighttime removal of NOxin the summer marine boundary layer. Geophysical Research Letters, 2004, 31, n/a-n/a.	4.0	127
89	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.	3.8	702
90	A comparison of particle mass spectrometers during the 1999 Atlanta Supersite Project. Journal of Geophysical Research, 2003, 108, .	3.3	90

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91	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.	3.3	65
92	Overview of the 1999 Atlanta Supersite Project. Journal of Geophysical Research, 2003, 108, .	3.3	43
93	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
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. Journal of Geophysical Research, 2002, 107, AAC 1-1.	3.3	106
95	Influence of sea-salt on aerosol radiative properties in the Southern Ocean marine boundary layer. Nature, 1998, 392, 62-65.	27.8	355
96	In situ single-particle characterization at Cape Grim. Journal of Geophysical Research, 1998, 103, 16485-16491.	3.3	79
97	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.	3.3	305
98	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.	3.1	46
99	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
100	Crystallization Kinetics of HNO3/H2O Films Representative of Polar Stratospheric Clouds. Journal of Physical Chemistry A, 1997, 101, 2112-2119.	2.5	32
101	Bromine, iodine, and chlorine in single aerosol particles at Cape Grim. Geophysical Research Letters, 1997, 24, 3197-3200.	4.0	65
102	Evaporation studies of model polar stratospheric cloud films. Geophysical Research Letters, 1996, 23, 2145-2148.	4.0	27
103	Laboratory studies of the formation of polar stratospheric clouds: Nitric acid condensation on thin sulfuric acid films. Journal of Geophysical Research, 1995, 100, 20969.	3.3	50
104	Growth of nitric acid hydrates on thin sulfuric acid films. Geophysical Research Letters, 1994, 21, 867-870.	4.0	39
105	Infrared optical constants of H2O ice, amorphous nitric acid solutions, and nitric acid hydrates. Journal of Geophysical Research, 1994, 99, 25631.	3.3	163
106	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.	3.3	55
107	Spectroscopic Studies of PSCs. , 1994, , 329-349.		0
108	Fourier transform infrared studies of the interaction of HCl with model polar stratospheric cloud films. Journal of Geophysical Research, 1993, 98, 10563-10571.	3.3	61

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109	Fourier transformâ€infrared studies of thin H₂SO₄/H₂O films: Formation, water uptake, and solidâ€liquid phase changes. Journal of Geophysical Research, 1993, 98, 20473-20481.	3.3	96
110	Characterization of model polar stratospheric cloud films using Fourier transform infrared spectroscopy and temperature programmed desorption. Journal of Geophysical Research, 1992, 97, 8065-8074.	3.3	122
111	Formation of model polar stratospheric cloud films. Geophysical Research Letters, 1992, 19, 2417-2420.	4.0	28
112	Spectroscopic studies of model polar stratospheric cloud films. Spectrochimica Acta Part A: Molecular Spectroscopy, 1992, 48, 1303-1313.	0.1	28
113	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, 22423-22431.	3.3	110
114	Kinetics of ethane oxidation on vanadium oxide. The Journal of Physical Chemistry, 1990, 94, 5029-5033.	2.9	85
115	Studies of interfacial composition of TiN films formed by plasmaâ€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.	2.1	11