Michael J Prather

List of Publications by Year
in descending order

#	Article	IF	Citations
1	TransCom 3 CO₂ inversion intercomparison: 1. Annual mean control results and sensitivity to transport and prior flux information. Tellus, Series B: Chemical and Physical Meteorology, 2022, 55, 555.	1.6	105
2	The NASA Atmospheric Tomography (ATom) Mission: Imaging the Chemistry of the Global Atmosphere. Bulletin of the American Meteorological Society, 2022, 103, E761-E790.	3.3	39
3	From the middle stratosphere to the surface, using nitrous oxide to constrain the stratosphereâ€“troposphere exchange of ozone. Atmospheric Chemistry and Physics, 2022, 22, 2079-2093.	4.9	9
4	CO₂ surface variability: from the stratosphere or not?. Earth System Dynamics, 2022, 13, 703-709.	7.1	1
5	Assessing Uncertainties and Approximations in Solar Heating of the Climate System. Journal of Advances in Modeling Earth Systems, 2021, 13, e2020MS002131.	3.8	0
6	Evaluation of the interactive stratospheric ozone (O3v2) module in the E3SM version 1 Earth system model. Geoscientific Model Development, 2021, 14, 1219-1236.	3.6	9
7	How Atmospheric Chemistry and Transport Drive Surface Variability of N 2 O and CFCâ€ 11. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD033979.	3.3	11
8	Heterogeneity and chemical reactivity of the remote troposphere defined by aircraft measurements. Atmospheric Chemistry and Physics, 2021, 21, 13729-13746.	4.9	4
9	A comprehensive quantification of global nitrous oxide sources and sinks. Nature, 2020, 586, 248-256.	27.8	814
10	Extracting a History of Global Fire Emissions for the Past Millennium From Ice Core Records of Acetylene, Ethane, and Methane. Journal of Geophysical Research D: Atmospheres, 2020, 125, e2020JD032932.	3.3	5
11	Reconstruction of Paleofire Emissions Over the Past Millennium From Measurements of Ice Core Acetylene. Geophysical Research Letters, 2020, 47, e2019GL085101.	4.0	9
12	Effects of Chemical Feedbacks on Decadal Methane Emissions Estimates. Geophysical Research Letters, 2020, 47, e2019GL085706.	4.0	17
13	A round Earth for climate models. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 19330-19335.	7.1	4
14	Cloud impacts on photochemistry: building a climatology of photolysis rates from the Atmospheric Tomography mission. Atmospheric Chemistry and Physics, 2018, 18, 16809-16828.	4.9	34
15	Large changes in biomass burning over the last millennium inferred from paleoatmospheric ethane in polar ice cores. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 12413-12418.	7.1	20
16	Forecasting carbon monoxide on a global scale for the ATom-1 aircraft mission: insights from airborne and satellite observations and modeling. Atmospheric Chemistry and Physics, 2018, 18, 10955-10971.	4.9	10
17	How well can global chemistry models calculate the reactivity of short-lived greenhouse gases in the remote troposphere, knowing the chemical composition. Atmospheric Measurement Techniques, 2018, 11, 2653-2668.	3.1	15
18	Co-occurrence of extremes in surface ozone, particulate matter, and temperature over eastern North America. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 2854-2859.	7.1	131

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19	Overexplaining or underexplaining methaneâ€™s role in climate change. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 5324-5326.	7.1	31
20	The seasonality and geographic dependence of ENSO impacts on U.S. surface ozone variability. Geophysical Research Letters, 2017, 44, 3420-3428.	4.0	21
21	Global atmospheric chemistry â€“ which air matters. Atmospheric Chemistry and Physics, 2017, 17, 9081-9102.	4.9	32
22	Multi-model simulations of aerosol and ozone radiative forcing due to anthropogenic emission changes during the periodÂ1990â€“2015. Atmospheric Chemistry and Physics, 2017, 17, 2709-2720.	4.9	87
23	Multi-model impacts of climate change on pollution transport from global emission source regions. Atmospheric Chemistry and Physics, 2017, 17, 14219-14237.	4.9	14
24	AerChemMIP: quantifying the effects of chemistry and aerosols in CMIP6. Geoscientific Model Development, 2017, 10, 585-607.	3.6	202
25	Young people's burden: requirement of negative CO₂ emissions. Earth System Dynamics, 2017, 8, 577-616.	7.1	189
26	A radiative transfer module for calculating photolysis rates and solar heating in climate models: Solar-J v7.5. Geoscientific Model Development, 2017, 10, 2525-2545.	3.6	3
27	Aerosol data assimilation in the chemical transport model MOCAGE during the TRAQA/ChArMEx campaign: aerosol optical depth. Atmospheric Measurement Techniques, 2016, 9, 5535-5554.	3.1	27
28	Data-rate-aware FPGA-based acceleration framework for streaming applications. , 2016, , .		7
29	Effect of climate change on surface ozone over North America, Europe, and East Asia. Geophysical Research Letters, 2016, 43, 3509-3518.	4.0	46
30	Measuring and modeling the lifetime of nitrous oxide including its variability. Journal of Geophysical Research D: Atmospheres, 2015, 120, 5693-5705.	3.3	151
31	Use of North American and European air quality networks to evaluate global chemistryâ€“climate modeling of surface ozone. Atmospheric Chemistry and Physics, 2015, 15, 10581-10596.	4.9	50
32	Photolysis rates in correlated overlapping cloud fields: Cloud-J 7.3c. Geoscientific Model Development, 2015, 8, 2587-2595.	3.6	20
33	A standard test case suite for two-dimensional linear transport on the sphere: results from a collection of state-of-the-art schemes. Geoscientific Model Development, 2014, 7, 105-145.	3.6	46
34	Is the residual vertical velocity a good proxy for stratosphereâ€troposphere exchange of ozone?. Geophysical Research Letters, 2014, 41, 9024-9032.	4.0	19
35	The climate impact of ship NO_x emissions: an improved estimate accounting for plume chemistry. Atmospheric Chemistry and Physics, 2014, 14, 6801-6812.	4.9	47
36	Skill in forecasting extreme ozone pollution episodes with a global atmospheric chemistry model. Atmospheric Chemistry and Physics, 2014, 14, 7721-7739.	4.9	46

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37	Preindustrial to present-day changes in tropospheric hydroxyl radical and methane lifetime from the Atmospheric Chemistry and Climate Model Intercomparison Project (ACCMIP). Atmospheric Chemistry and Physics, 2013, 13, 5277-5298.	4.9	288
38	Stratospheric ozone, global warming, and the principle of unintended consequencesâ€"An ongoing science and policy story. Journal of the Air and Waste Management Association, 2013, 63, 1235-1244.	1.9	3
39	Analysis of present day and future OH and methane lifetime in the ACCMIP simulations. Atmospheric Chemistry and Physics, 2013, 13, 2563-2587.	4.9	257
40	Future methane, hydroxyl, and their uncertainties: key climate and emission parameters for future predictions. Atmospheric Chemistry and Physics, 2013, 13, 285-302.	4.9	171
41	Sensitivity of stratospheric dynamics to uncertainty in O₃ production. Journal of Geophysical Research D: Atmospheres, 2013, 118, 8984-8999.	3.3	3
42	A perspective on time: loss frequencies, time scales and lifetimes. Environmental Chemistry, 2013, 10, 73.	1.5	4
43	F. Sherwood Rowland (1927â€"2012). Nature, 2012, 484, 168-168.	27.8	2
44	Future impact of traffic emissions on atmospheric ozone and OH based on two scenarios. Atmospheric Chemistry and Physics, 2012, 12, 12211-12225.	4.9	13
45	Iconic CO ₂ Time Series at Risk. Science, 2012, 337, 1038-1040.	12.6	15
46	Reactive greenhouse gas scenarios: Systematic exploration of uncertainties and the role of atmospheric chemistry. Geophysical Research Letters, 2012, 39, .	4.0	406
47	Global air quality and climate. Chemical Society Reviews, 2012, 41, 6663.	38.1	428
48	An atmospheric chemist in search of the tropopause. Journal of Geophysical Research, 2011, 116, .	3.3	82
49	Recent decreases in fossil-fuel emissions of ethane and methane derived from firn air. Nature, 2011, 476, 198-201.	27.8	156
50	Uncertainties in climate assessment for the case of aviation NO. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 10997-11002.	7.1	67
51	Short-lived uncertainty?. Nature Geoscience, 2010, 3, 587-588.	12.9	42
52	Coupling of Nitrous Oxide and Methane by Global Atmospheric Chemistry. Science, 2010, 330, 952-954.	12.6	73
53	Global longâ€lived chemical modes excited in a 3â€D chemistry transport model: Stratospheric N₂O, NO_{<i>y</i>}, O₃ and CH₄ chemistry. Geophysical Research Letters, 2010, 37, .	4.0	34
54	Correction to â€œNF₃, the greenhouse gas missing from Kyotoâ€ Geophysical Research Letters, 2010, 37, .	4.0	6

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55	Intercontinental Impacts of Ozone Pollution on Human Mortality. Environmental Science & Technology, 2009, 43, 6482-6487.	10.0	126
56	Stratospheric variability and tropospheric ozone. Journal of Geophysical Research, 2009, 114, .	3.3	114
57	Tracking uncertainties in the causal chain from human activities to climate. Geophysical Research Letters, 2009, 36, .	4.0	25
58	Tropospheric O₃ from photolysis of O₂. Geophysical Research Letters, 2009, 36, .	4.0	13
59	Oceanic alkyl nitrates as a natural source of tropospheric ozone. Geophysical Research Letters, 2008, 35, .	4.0	26
60	NF₃, the greenhouse gas missing from Kyoto. Geophysical Research Letters, 2008, 35, .	4.0	76
61	Quantifying errors in trace species transport modeling. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 19617-19621.	7.1	59
62	Lifetimes and time scales in atmospheric chemistry. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2007, 365, 1705-1726.	3.4	50
63	Global atmospheric chemistry: Integrating over fractional cloud cover. Journal of Geophysical Research, 2007, 112, .	3.3	76
64	Global tropospheric ozone modeling: Quantifying errors due to grid resolution. Journal of Geophysical Research, 2006, 111, .	3.3	135
65	Diagnosing the stratosphere-to-troposphere flux of ozone in a chemistry transport model. Journal of Geophysical Research, 2005, 110, .	3.3	95
66	Are the TRACE-P measurements representative of the western Pacific during March 2001?. Journal of Geophysical Research, 2004, 109, .	3.3	20
67	TransCom 3 CO2 inversion intercomparison: 1. Annual mean control results and sensitivity to transport and prior flux information. Tellus, Series B: Chemical and Physical Meteorology, 2003, 55, 555-579.	1.6	235
68	Fresh air in the 21st century?. Geophysical Research Letters, 2003, 30, .	4.0	192
69	Tropospheric aerosol impacts on trace gas budgets through photolysis. Journal of Geophysical Research, 2003, 108, .	3.3	55
70	Chemical transport model ozone simulations for spring 2001 over the western Pacific: Comparisons with TRACE-P lidar, ozonesondes, and Total Ozone Mapping Spectrometer columns. Journal of Geophysical Research, 2003, 108, .	3.3	64
71	ATMOSPHERIC SCIENCE: An Environmental Experiment with H2?. Science, 2003, 302, 581-582.	12.6	65
72	Lifetimes of atmospheric species: Integrating environmental impacts. Geophysical Research Letters, 2002, 29, 20-1-20-3.	4.0	12

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73	Towards robust regional estimates of CO2 sources and sinks using atmospheric transport models. Nature, 2002, 415, 626-630.	27.8	1,157
74	Fast-J2: Accurate Simulation of Stratospheric Photolysis in Global Chemical Models. Journal of Atmospheric Chemistry, 2002, 41, 281-296.	3.2	213
75	Indirect long-term global radiative cooling from NOxEmissions. Geophysical Research Letters, 2001, 28, 1719-1722.	4.0	178
76	CO2source inversions using satellite observations of the upper troposphere. Geophysical Research Letters, 2001, 28, 4571-4574.	4.0	43
77	GEMS, goals, thanks, and farewell. Geophysical Research Letters, 2001, 28, 4515-4516.	4.0	0
78	Fast-J: Accurate Simulation of In- and Below-Cloud Photolysis in Tropospheric Chemical Models. Journal of Atmospheric Chemistry, 2000, 37, 245-282.	3.2	537
79	Excitation of the primary tropospheric chemical mode in a global three-dimensional model. Journal of Geophysical Research, 2000, 105, 24647-24660.	3.3	98
80	Evaluating ozone depletion from very short-lived halocarbons. Geophysical Research Letters, 2000, 27, 1475-1478.	4.0	25
81	Uncertain road to ozone recovery. Nature, 1999, 398, 663-664.	27.8	14
82	Time Scales in Atmospheric Chemistry: Coupled Perturbations to N2O, NOy, and O3. Science, 1998, 279, 1339-1341.	12.6	102
83	Tracer-tracer correlations: Three-dimensional model simulations and comparisons to observations. Journal of Geophysical Research, 1997, 102, 19233-19246.	3.3	51
84	Timescales in atmospheric chemistry: CH3Br, the ocean, and ozone depletion potentials. Global Biogeochemical Cycles, 1997, 11, 393-400.	4.9	17
85	A persistent imbalance in HOxand NOxphotochemistry of the upper troposphere driven by deep tropical convection. Geophysical Research Letters, 1997, 24, 3189-3192.	4.0	165
86	Results from the Intergovernmental Panel on Climatic Change Photochemical Model Intercomparison (PhotoComp). Journal of Geophysical Research, 1997, 102, 5979-5991.	3.3	68
87	Bromine-chlorine coupling in the Antarctic Ozone Hole. Geophysical Research Letters, 1996, 23, 153-156.	4.0	27
88	Time scales in atmospheric chemistry: Theory, GWPs for CH4and CO, and runaway growth. Geophysical Research Letters, 1996, 23, 2597-2600.	4.0	153
89	The ozone layer: the road not taken. Nature, 1996, 381, 551-554.	27.8	64
90	Seasonal evolutions of N2O, O3, and CO2: Three-dimensional simulations of stratospheric correlations. Journal of Geophysical Research, 1995, 100, 16699.	3.3	42

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91	Better protection of the ozone layer. Nature, 1994, 367, 505-508.	27.8	23
92	Lifetimes and eigenstates in atmospheric chemistry. Geophysical Research Letters, 1994, 21, 801-804.	4.0	119
93	Global warming from chlorofluorocarbons and their alternatives: Time scales of chemistry and climate. Atmospheric Environment Part A General Topics, 1993, 27, 581-587.	1.3	18
94	Simulations of the trend and annual cycle in stratospheric CO₂. Journal of Geophysical Research, 1993, 98, 10573-10581.	3.3	49
95	More rapid polar ozone depletion through the reaction of HOCl with HCl on polar stratospheric clouds. Nature, 1992, 355, 534-537.	27.8	69
96	Reply [to â€œComment on â€˜The space shuttle's impact on the stratosphereâ€™ by Michael J. Prather et al.â€]. Journal of Geophysical Research, 1991, 96, 17379-17381.	3.3	8
97	Stratospheric ozone depletion and future levels of atmospheric chlorine and bromine. Nature, 1990, 344, 729-734.	27.8	179
98	Radon-222 as a test of convective transport in a general circulation model. Tellus, Series B: Chemical and Physical Meteorology, 1990, 42, 118-134.	1.6	82
99	Global impact of the Antarctic ozone hole: Chemical propagation. Journal of Geophysical Research, 1990, 95, 3473-3492.	3.3	113
100	Tropospheric OH and the lifetimes of hydrochlorofluorocarbons. Journal of Geophysical Research, 1990, 95, 18723-18729.	3.3	116
101	European sources of halocarbons and nitrous oxide: Update 1986. Journal of Atmospheric Chemistry, 1988, 6, 375-406.	3.2	24
102	Antarctic ozone: Meteoric control of HNO₃. Geophysical Research Letters, 1988, 15, 1-4.	4.0	32
103	Chemistry of the global troposphere: Fluorocarbons as tracers of air motion. Journal of Geophysical Research, 1987, 92, 6579-6613.	3.3	287
104	Numerical advection by conservation of secondâ€order moments. Journal of Geophysical Research, 1986, 91, 6671-6681.	3.3	756
105	Continental sources of halocarbons and nitrous oxide. Nature, 1985, 317, 221-225.	27.8	38
106	Reductions in ozone at high concentrations of stratospheric halogens. Nature, 1984, 312, 227-231.	27.8	166
107	Tropospheric chemistry: A global perspective. Journal of Geophysical Research, 1981, 86, 7210-7254.	3.3	1,715
108	Noble gases in the terrestrial planets. Nature, 1981, 293, 535-539.	27.8	60

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109	Oxidation of CS2 and COS: sources for atmospheric SO2. Nature, 1979, 281, 185-188.	27.8	79
110	Photoelectrons in the upper atmosphere: A formulation incorporating effects of transport. Planetary and Space Science, 1978, 26, 131-138.	1.7	15