Michael J Mills

List of Publications by Citations

102	4,752	37	67
papers	citations	h-index	g-index
130	5,969	6.2	5.51
ext. papers	ext. citations	avg, IF	L-index

#	Paper	IF	Citations
102	Climate Change from 1850 to 2005 Simulated in CESM1(WACCM). *Journal of Climate*, **2013**, 26, 7372-7391	4.4	561
101	The Community Earth System Model Version 2 (CESM2). *Journal of Advances in Modeling Earth Systems*, **2020**, 12, e2019MS001916	7.1	358
100	Emergence of healing in the Antarctic ozone layer. *Science*, **2016**, 353, 269-74	33.3	337
99	Do hydrofluorocarbons destroy stratospheric ozone?. *Science*, **1994**, 263, 71-5	33.3	226
98	The hydrological impact of geoengineering in the Geoengineering Model Intercomparison Project (GeoMIP). *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 11,036-11,058	4.4	161
97	High Climate Sensitivity in the Community Earth System Model Version 2 (CESM2). *Geophysical Research Letters*, **2019**, 46, 8329-8337	4.9	141
96	Global volcanic aerosol properties derived from emissions, 1990–2014, using CESM1(WACCM). *Journal of Geophysical Research D: Atmospheres*, **2016**, 121, 2332-2348	4.4	135
95	On the evaluation of ozone depletion potentials. *Journal of Geophysical Research*, **1992**, 97, 825		135
94	The Whole Atmosphere Community Climate Model Version 6 (WACCM6). *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 12380-12403	4.4	126
93	The Model Intercomparison Project on the climatic response to Volcanic forcing (VolMIP): experimental design and forcing input data for CMIP6. *Geoscientific Model Development*, **2016**, 9, 2701-2719	6.3	99
92	Massive global ozone loss predicted following regional nuclear conflict. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 5307-12	11.5	92
91	Atmospheric lifetimes and ozone depletion potentials of methyl bromide (CH3Br) and dibromomethane (CH2Br2). *Geophysical Research Letters*, **1992**, 19, 2059-2062	4.9	92
90	Radiative and Chemical Response to Interactive Stratospheric Sulfate Aerosols in Fully Coupled CESM1(WACCM). *Journal of Geophysical Research D: Atmospheres*, **2017**, 122, 13,061	4.4	86
89	Recent anthropogenic increases in SO2 from Asia have minimal impact on stratospheric aerosol. *Geophysical Research Letters*, **2013**, 40, 999-1004	4.9	82
88	The Chemistry Mechanism in the Community Earth System Model Version 2 (CESM2). *Journal of Advances in Modeling Earth Systems*, **2020**, 12, e2019MS001882	7.1	78
87	First Simulations of Designing Stratospheric Sulfate Aerosol Geoengineering to Meet Multiple Simultaneous Climate Objectives. *Journal of Geophysical Research D: Atmospheres*, **2017**, 122, 12,616	4.4	75
86	Microphysical simulations of sulfur burdens from stratospheric sulfur geoengineering. *Atmospheric Chemistry and Physics*, **2012**, 12, 4775-4793	6.8	75

85	CESM1(WACCM) Stratospheric Aerosol Geoengineering Large Ensemble Project. *Bulletin of the American Meteorological Society*, **2018**, 99, 2361-2371	6.1	74
84	Microphysical simulations of large volcanic eruptions: Pinatubo and Toba. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 1880-1895	4.4	66
83	The Climate Response to Stratospheric Aerosol Geoengineering Can Be Tailored Using Multiple Injection Locations. *Journal of Geophysical Research D: Atmospheres*, **2017**, 122, 12,574	4.4	62
82	Electron impact ionization: A new parameterization for 100 eV to 1 MeV electrons. *Journal of Geophysical Research*, **2008**, 113, n/a-n/a		60
81	Microphysical simulations of new particle formation in the upper troposphere and lower stratosphere. *Atmospheric Chemistry and Physics*, **2011**, 11, 9303-9322	6.8	58
80	Sensitivity of Aerosol Distribution and Climate Response to Stratospheric SO2 Injection Locations. *Journal of Geophysical Research D: Atmospheres*, **2017**, 122, 12,591	4.4	57
79	Systemic swings in end-Permian climate from Siberian Traps carbon and sulfur outgassing. *Nature Geoscience*, **2018**, 11, 949-954	18.3	55
78	Climate Forcing and Trends of Organic Aerosols in the Community Earth System Model (CESM2). *Journal of Advances in Modeling Earth Systems*, **2019**, 11, 4323-4351	7.1	50
77	Volcanic Radiative Forcing From 1979 to 2015. *Journal of Geophysical Research D: Atmospheres*, **2018**, 123, 12491-12508	4.4	50
76	Stratospheric Dynamical Response and Ozone Feedbacks in the Presence of SO2 Injections. *Journal of Geophysical Research D: Atmospheres*, **2017**, 122, 12,557	4.4	49
75	Multidecadal global cooling and unprecedented ozone loss following a regional nuclear conflict. *Earth's Future*, **2014**, 2, 161-176	7.9	49
74	On the relationship between stratospheric aerosols and nitrogen dioxide. *Geophysical Research Letters*, **1993**, 20, 1187-1190	4.9	48
73	Implications of extinction due to meteoritic smoke in the upper stratosphere. *Geophysical Research Letters*, **2011**, 38, n/a-n/a	4.9	46
72	Upper limit for the UV absorption cross sections of H2SO4. *Geophysical Research Letters*, **2000**, 27, 2493-2496	4.9	43
71	On the age of stratospheric air and ozone depletion potentials in polar regions. *Journal of Geophysical Research*, **1992**, 97, 12993		43
70	The influence of the Calbuco eruption on the 2015 Antarctic ozone hole in a fully coupled chemistry-climate model. *Geophysical Research Letters*, **2017**, 44, 2556-2561	4.9	39
69	Photolysis of sulfuric acid vapor by visible light as a source of the polar stratospheric CN layer. *Journal of Geophysical Research*, **2005**, 110,		38
68	A 2D microphysical model of the polar stratospheric CN layer. *Geophysical Research Letters*, **1999**, 26, 1133-1136	4.9	38

67	The Regional Hydroclimate Response to Stratospheric Sulfate Geoengineering and the Role of Stratospheric Heating. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 12587-12616	4.4	38
66	A new Geoengineering Model Intercomparison Project (GeoMIP) experiment designed for climate and chemistry models. *Geoscientific Model Development*, **2015**, 8, 43-49	6.3	37
65	Effects of Different Stratospheric SO2 Injection Altitudes on Stratospheric Chemistry and Dynamics. *Journal of Geophysical Research D: Atmospheres*, **2018**, 123, 4654-4673	4.4	37
64	The Interactive Stratospheric Aerosol Model Intercomparison Project (ISA-MIP): motivation and experimental design. *Geoscientific Model Development*, **2018**, 11, 2581-2608	6.3	36
63	Potential climate impact of black carbon emitted by rockets. *Geophysical Research Letters*, **2010**, 37, n/a-n/a	4.9	35
62	Intra-seasonal variability of polar mesospheric clouds due to inter-hemispheric coupling. *Geophysical Research Letters*, **2009**, 36,	4.9	34
61	Multi-model comparison of the volcanic sulfate deposition from the 1815 eruption of Mt. Tambora. *Atmospheric Chemistry and Physics*, **2018**, 18, 2307-2328	6.8	31
60	Comparing Surface and Stratospheric Impacts of Geoengineering With Different SO2 Injection Strategies. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 7900-7918	4.4	30
59	Mesospheric sulfate aerosol layer. *Journal of Geophysical Research*, **2005**, 110,		30
58	Evaluations of tropospheric aerosol properties simulated by the community earth system model with a sectional aerosol microphysics scheme. *Journal of Advances in Modeling Earth Systems*, **2015**, 7, 865-914	7.1	27
57	Mystery of the volcanic mass-independent sulfur isotope fractionation signature in the Antarctic ice core. *Geophysical Research Letters*, **2005**, 32, n/a-n/a	4.9	27
56	Mirrored changes in Antarctic ozone and stratospheric temperature in the late 20th versus early 21st centuries. *Journal of Geophysical Research D: Atmospheres*, **2017**, 122, 8940-8950	4.4	26
55	Soil Moisture and Other Hydrological Changes in a Stratospheric Aerosol Geoengineering Large Ensemble. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 12773-12793	4.4	25
54	Timescale for Detecting the Climate Response to Stratospheric Aerosol Geoengineering. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 1233-1247	4.4	22
53	Observing the Impact of Calbuco Volcanic Aerosols on South Polar Ozone Depletion in 2015. *Journal of Geophysical Research D: Atmospheres*, **2017**, 122, 11,862	4.4	22
52	Decadal reduction of Chinese agriculture after a regional nuclear war. *Earth's Future*, **2015**, 3, 37-48	7.9	22
51	An Evaluation of the Large-Scale Atmospheric Circulation and Its Variability in CESM2 and Other CMIP Models. *Journal of Geophysical Research D: Atmospheres*, **2020**, 125, e2020JD032835	4.4	21
50	Persisting volcanic ash particles impact stratospheric SO lifetime and aerosol optical properties. *Nature Communications*, **2020**, 11, 4526	17.4	20

49	Stratospheric Sulfate Aerosol Geoengineering Could Alter the High-Latitude Seasonal Cycle. *Geophysical Research Letters*, **2019**, 46, 14153-14163	4.9	19
48	Stratospheric Aerosols, Polar Stratospheric Clouds, and Polar Ozone Depletion After the Mount Calbuco Eruption in 2015. *Journal of Geophysical Research D: Atmospheres*, **2018**, 123, 12,308	4.4	19
47	A climatology of cold air outbreaks over North America: WACCM and ERA-40 comparison and analysis. *Journal of Geophysical Research*, **2011**, 116,		18
46	Reaching 1.5 and 2.0 °C global surface temperature targets using stratospheric aerosol geoengineering. *Earth System Dynamics*, **2020**, 11, 579-601	4.8	18
45	Historical total ozone radiative forcing derived from CMIP6 simulations. *Npj Climate and Atmospheric Science*, **2020**, 3,	8	18
44	Effective radiative forcing from emissions of reactive gases and aerosols – a multi-model comparison. *Atmospheric Chemistry and Physics*, **2021**, 21, 853-874	6.8	18
43	Catastrophic ozone loss during passage of the Solar system through an interstellar cloud. *Geophysical Research Letters*, **2005**, 32,	4.9	17
42	Monsoon circulations and tropical heterogeneous chlorine chemistry in the stratosphere. *Geophysical Research Letters*, **2016**, 43, 12,624	4.9	17
41	Persistent polar ocean warming in a strategically geoengineered climate. *Nature Geoscience*, **2018**, 11, 910-914	18.3	17
40	The Role of Sulfur Dioxide in Stratospheric Aerosol Formation Evaluated Using In-Situ Measurements in the Tropical Lower Stratosphere. *Geophysical Research Letters*, **2017**, 44, 4280-4286	4.9	16
39	Modeling the 1783–1784 Laki Eruption in Iceland: 2. Climate Impacts. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 6770-6790	4.4	16
38	Seasonal Injection Strategies for Stratospheric Aerosol Geoengineering. *Geophysical Research Letters*, **2019**, 46, 7790-7799	4.9	16
37	Evaluating stratospheric ozone and water vapour changes in CMIP6 models from 1850 to 2100. *Atmospheric Chemistry and Physics*, **2021**, 21, 5015-5061	6.8	16
36	Reconciling modeled and observed temperature trends over Antarctica. *Geophysical Research Letters*, **2012**, 39, n/a-n/a	4.9	15
35	Atmospheric Photolysis of Sulfuric Acid. *Advances in Quantum Chemistry*, **2008**, 55, 137-158	1.4	15
34	Nitrate deposition to surface snow at Summit, Greenland, following the 9 November 2000 solar proton event. *Journal of Geophysical Research D: Atmospheres*, **2014**, 119, 6938-6957	4.4	14
33	Stratospheric Response in the First Geoengineering Simulation Meeting Multiple Surface Climate Objectives. *Journal of Geophysical Research D: Atmospheres*, **2018**, 123, 5762-5782	4.4	14
32	Development of a Polar Stratospheric Cloud Model within the Community Earth System Model using constraints on Type I PSCs from the 2010–2011 Arctic winter. *Journal of Advances in Modeling Earth Systems*, **2015**, 7, 551-585	7.1	13

31	Model physics and chemistry causing intermodel disagreement within the VolMIP-Tambora Interactive Stratospheric Aerosol ensemble. *Atmospheric Chemistry and Physics*, **2021**, 21, 3317-3343	6.8	12
30	Modeling the 1783–1784 Laki Eruption in Iceland: 1. Aerosol Evolution and Global Stratospheric Circulation Impacts. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 6750-6769	4.4	11
29	Seasonally Modulated Stratospheric Aerosol Geoengineering Alters the Climate Outcomes. *Geophysical Research Letters*, **2020**, 47, e2020GL088337	4.9	11
28	The potential impacts of a sulfur- and halogen-rich supereruption such as Los Chocoyos on the atmosphere and climate. *Atmospheric Chemistry and Physics*, **2020**, 20, 6521-6539	6.8	9
27	Evaluating stratospheric ozone and water vapor changes in CMIP6 models from 1850–2100 **2020**,		8
26	Detectability of the impacts of ozone-depleting substances and greenhouse gases upon stratospheric ozone accounting for nonlinearities in historical forcings. *Atmospheric Chemistry and Physics*, **2018**, 18, 143-166	6.8	8
25	Impacts of meteoric sulfur in the Earth's atmosphere. *Journal of Geophysical Research D: Atmospheres*, **2017**, 122, 7678-7701	4.4	7
24	On the Role of Heterogeneous Chemistry in Ozone Depletion and Recovery. *Geophysical Research Letters*, **2018**, 45, 7835-7842	4.9	7
23	The global extent of the mid stratospheric CN layer: A three-dimensional modeling study. *Journal of Geophysical Research D: Atmospheres*, **2014**, 119, 1015-1030	4.4	7
22	Characteristics of Future Warmer Base States in CESM2. *Earth and Space Science*, **2020**, 7, e2020EA001296	3.1	7
21	Climatology of mesopause region nocturnal temperature, zonal wind and sodium density observed by sodium lidar over Hefei, China (32°N, 117°E). *Atmospheric Chemistry and Physics*, **2018**, 18, 11683-11695	6.8	7
20	Meteoric smoke and H2SO4 aerosols in the upper stratosphere and mesosphere. *Geophysical Research Letters*, **2017**, 44, 1150-1157	4.9	6
19	Asia Treads the Nuclear Path, Unaware That Self-Assured Destruction Would Result from Nuclear War. *Journal of Asian Studies*, **2017**, 76, 437-456	0.1	6
18	Identifying the sources of uncertainty in climate model simulations of solar radiation modification with the G6sulfur and G6solar Geoengineering Model Intercomparison Project (GeoMIP) simulations. *Atmospheric Chemistry and Physics*, **2021**, 21, 10039-10063	6.8	5
17	23rd Century surprises: Long-term dynamics of the climate and carbon cycle under both high and net negative emissions scenarios		4
16	Modeled and Observed Volcanic Aerosol Control on Stratospheric NOy and Cly. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 10283-10303	4.4	4
15	Decadal Disruption of the QBO by Tropical Volcanic Supereruptions. *Geophysical Research Letters*, **2021**, 48, e2020GL089687	4.9	4
14	Future changes in isoprene-epoxydiol-derived secondary organic aerosol (IEPOX SOA) under the Shared Socioeconomic Pathways: the importance of physicochemical dependency. *Atmospheric Chemistry and Physics*, **2021**, 21, 3395-3425	6.8	4

List of Publications

13	On Recent Large Antarctic Ozone Holes and Ozone Recovery Metrics. *Geophysical Research Letters*, **2021**, 48, e2021GL095232	4.9	3
12	Assessing terrestrial biogeochemical feedbacks in a strategically geoengineered climate. *Environmental Research Letters*, **2020**, 15, 104043	6.2	3
11	The Interactive Stratospheric Aerosol Model Intercomparison Project (ISA-MIP): Motivation and experimental design **2018**,		3
10	Microphysical simulations of new particle formation in the upper troposphere and lower stratosphere		2
9	A new Geoengineering Model Intercomparison Project (GeoMIP) experiment designed for climate and chemistry models		2
8	The Model Intercomparison Project on the climatic response to Volcanic forcing (VolMIP): Experimental design and forcing input data **2016**,		2
7	Holistic Assessment of SO2 Injections Using CESM1(WACCM): Introduction to the Special Issue. *Journal of Geophysical Research D: Atmospheres*, **2019**, 124, 444-450	4.4	2
6	Microphysical simulations of sulfur burdens from stratospheric sulfur geoengineering		1
5	Extreme Ozone Loss Following Nuclear War Results in Enhanced Surface Ultraviolet Radiation. *Journal of Geophysical Research D: Atmospheres*, **2021**, 126, e2021JD035079	4.4	1
4	Limitations of assuming internal mixing between different aerosol species: a case study with sulfate geoengineering simulations. *Atmospheric Chemistry and Physics*, **2022**, 22, 1739-1756	6.8	0
3	Multi-century dynamics of the climate and carbon cycle under both high and net negative emissions scenarios. *Earth System Dynamics*, **2022**, 13, 885-909	4.8	0
2	Stratospheric Sulfate Aerosols and Planetary Albedo **2014**, 771-776		
1	Climatic Consequences and Agricultural Impacts of Nuclear Conflicts328-340		