Phil Rasch

List of Publications by Citations

238 papers	22,913 citations	74 h-index	149 g-index
255 ext. papers	25,665 ext. citations	5.6 avg, IF	6.62 L-index

#	Paper	IF	Citations
238	The Community Climate System Model Version 4. *Journal of Climate*, **2011**, 24, 4973-4991	4.4	2037
237	Present-day climate forcing and response from black carbon in snow. *Journal of Geophysical Research*, **2007**, 112,		898
236	The National Center for Atmospheric Research Community Climate Model: CCM3*. *Journal of Climate*, **1998**, 11, 1131-1149	4.4	859
235	The Formulation and Atmospheric Simulation of the Community Atmosphere Model Version 3 (CAM3). *Journal of Climate*, **2006**, 19, 2144-2161	4.4	812
234	A global simulation of tropospheric ozone and related tracers: Description and evaluation of MOZART, version 2. *Journal of Geophysical Research*, **2003**, 108, n/a-n/a		741
233	Tropical Intraseasonal Variability in 14 IPCC AR4 Climate Models. Part I: Convective Signals. *Journal of Climate*, **2006**, 19, 2665-2690	4.4	614
232	Radiative forcing of the direct aerosol effect from AeroCom Phase II simulations. *Atmospheric Chemistry and Physics*, **2013**, 13, 1853-1877	6.8	598
231	The Mean Climate of the Community Atmosphere Model (CAM4) in Forced SST and Fully Coupled Experiments. *Journal of Climate*, **2013**, 26, 5150-5168	4.4	520
230	CAM-chem: description and evaluation of interactive atmospheric chemistry in the Community Earth System Model. *Geoscientific Model Development*, **2012**, 5, 369-411	6.3	519
229	A Comparison of the CCM3 Model Climate Using Diagnosed and Predicted Condensate Parameterizations. *Journal of Climate*, **1998**, 11, 1587-1614	4.4	418
228	Springtime warming and reduced snow cover from carbonaceous particles. *Atmospheric Chemistry and Physics*, **2009**, 9, 2481-2497	6.8	417
227	MOZART, a global chemical transport model for ozone and related chemical tracers: 1. Model description. *Journal of Geophysical Research*, **1998**, 103, 28265-28289		360
226	Recent advances in understanding secondary organic aerosol: Implications for global climate forcing. *Reviews of Geophysics*, **2017**, 55, 509-559	23.1	359
225	The Community Earth System Model Version 2 (CESM2). *Journal of Advances in Modeling Earth Systems*, **2020**, 12, e2019MS001916	7.1	358
224	Aerosol indirect effects general circulation model intercomparison and evaluation with satellite data. *Atmospheric Chemistry and Physics*, **2009**, 9, 8697-8717	6.8	356
223	Change in atmospheric mineral aerosols in response to climate: Last glacial period, preindustrial, modern, and doubled carbon dioxide climates. *Journal of Geophysical Research*, **2006**, 111, n/a-n/a		325
222	Improving our fundamental understanding of the role of aerosol-cloud interactions in the climate system. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 5781-90	11.5	314

221	Two-Dimensional Semi-Lagrangian Transport with Shape-Preserving Interpolation. *Monthly Weather Review*, **1989**, 117, 102-129	2.4	281
220	Impact of anthropogenic atmospheric nitrogen and sulfur deposition on ocean acidification and the inorganic carbon system. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 14580-5	11.5	280
219	Representations of transport, convection, and the hydrologic cycle in chemical transport models: Implications for the modeling of short-lived and soluble species. *Journal of Geophysical Research*, **1997**, 102, 28127-28138		258
218	Short-term modulation of Indian summer monsoon rainfall by West Asian dust. *Nature Geoscience*, **2014**, 7, 308-313	18.3	244
217	Effects of Convective Momentum Transport on the Atmospheric Circulation in the Community Atmosphere Model, Version 3. *Journal of Climate*, **2008**, 21, 1487-1499	4.4	233
216	Evaluation and intercomparison of global atmospheric transport models using 222Rn and other short-lived tracers. *Journal of Geophysical Research*, **1997**, 102, 5953-5970		231
215	MOZART, a global chemical transport model for ozone and related chemical tracers: 2. Model results and evaluation. *Journal of Geophysical Research*, **1998**, 103, 28291-28335		231
214	Assessing future nitrogen deposition and carbon cycle feedback using a multimodel approach: Analysis of nitrogen deposition. *Journal of Geophysical Research*, **2005**, 110,		221
213	The DOE E3SM Coupled Model Version 1: Overview and Evaluation at Standard Resolution. *Journal of Advances in Modeling Earth Systems*, **2019**, 11, 2089-2129	7.1	217
212	Toward a Minimal Representation of Aerosols in Climate Models: Comparative Decomposition of Aerosol Direct, Semidirect, and Indirect Radiative Forcing. *Journal of Climate*, **2012**, 25, 6461-6476	4.4	215
211	Sulfur chemistry in the National Center for Atmospheric Research Community Climate Model: Description, evaluation, features, and sensitivity to aqueous chemistry. *Journal of Geophysical Research*, **2000**, 105, 1387-1415		211
210	Effect of clouds on photolysis and oxidants in the troposphere. *Journal of Geophysical Research*, **2003**, 108,		208
209	An overview of geoengineering of climate using stratospheric sulphate aerosols. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2008**, 366, 4007-37	3	205
208	The influence of large-scale wind power on global climate. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 16115-20	11.5	204
207	Climate model response from the Geoengineering Model Intercomparison Project (GeoMIP). *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 8320-8332	4.4	195
206	Integrating Cloud Processes in the Community Atmosphere Model, Version 5. *Journal of Climate*, **2014**, 27, 6821-6856	4.4	193
205	Description and evaluation of a new four-mode version of the Modal Aerosol Module (MAM4) within version 5.3 of the Community Atmosphere Model. *Geoscientific Model Development*, **2016**, 9, 505-522	6.3	179
204	Radiative forcing due to sulfate aerosols from simulations with the National Center for Atmospheric Research Community Climate Model, Version 3. *Journal of Geophysical Research*, **2000**, 105, 1441-1457		171

203	Analysis of Multi-angle Imaging SpectroRadiometer (MISR) aerosol optical depths over greater India during winter 2001–2004. *Geophysical Research Letters*, **2004**, 31,	4.9	170
202	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
201	Computational aspects of moisture transport in global models of the atmosphere. *Quarterly Journal of the Royal Meteorological Society*, **1990**, 116, 1071-1090	6.4	154
200	Climate response of the South Asian monsoon system to anthropogenic aerosols. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		150
199	A description of the global sulfur cycle and its controlling processes in the National Center for Atmospheric Research Community Climate Model, Version 3. *Journal of Geophysical Research*, **2000**, 105, 1367-1385		149
198	A model for studies of tropospheric ozone and nonmethane hydrocarbons: Model description and ozone results. *Journal of Geophysical Research*, **2003**, 108, n/a-n/a		146
197	Understanding the Indian Ocean Experiment (INDOEX) aerosol distributions with an aerosol assimilation. *Journal of Geophysical Research*, **2001**, 106, 7337-7355		145
196	Exploring the geoengineering of climate using stratospheric sulfate aerosols: The role of particle size. *Geophysical Research Letters*, **2008**, 35,	4.9	136
195	Sensitivity of remote aerosol distributions to representation of cloud–aerosol interactions in a global climate model. *Geoscientific Model Development*, **2013**, 6, 765-782	6.3	134
194	A model for studies of tropospheric photochemistry: Description, global distributions, and evaluation. *Journal of Geophysical Research*, **1999**, 104, 26245-26277		134
193	Global long-range transport and lung cancer risk from polycyclic aromatic hydrocarbons shielded by coatings of organic aerosol. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 1246-1251	11.5	131
192	Transport of 222radon to the remote troposphere using the Model of Atmospheric Transport and Chemistry and assimilated winds from ECMWF and the National Center for Environmental Prediction/NCAR. *Journal of Geophysical Research*, **1997**, 102, 28139-28151		131
191	Global temperature stabilization via controlled albedo enhancement of low-level maritime clouds. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2008**, 366, 3969-87	3	131
190	Representation of Clouds and Precipitation Processes in the Community Atmosphere Model Version 3 (CAM3). *Journal of Climate*, **2006**, 19, 2184-2198	4.4	131
189	Simulation of the Global Hydrological Cycle in the CCSM Community Atmosphere Model Version 3 (CAM3): Mean Features. *Journal of Climate*, **2006**, 19, 2199-2221	4.4	127
188	Impact of geoengineered aerosols on the troposphere and stratosphere. *Journal of Geophysical Research*, **2009**, 114,		125
187	Increasing water cycle extremes in California and in relation to ENSO cycle under global warming. *Nature Communications*, **2015**, 6, 8657	17.4	116
186	CGILS: Results from the first phase of an international project to understand the physical mechanisms of low cloud feedbacks in single column models. *Journal of Advances in Modeling Earth Systems*, **2013**, 5, 826-842	7.1	115

185	A model for studies of tropospheric ozone and nonmethane hydrocarbons: Model evaluation of ozone-related species. *Journal of Geophysical Research*, **2003**, 108,		115
184	Technical Note: On the use of nudging for aerosol–climate model intercomparison studies. *Atmospheric Chemistry and Physics*, **2014**, 14, 8631-8645	6.8	112
183	Tropical and Subtropical Cloud Transitions in Weather and Climate Prediction Models: The GCSS/WGNE Pacific Cross-Section Intercomparison (GPCI). *Journal of Climate*, **2011**, 24, 5223-5256	4.4	112
182	Global chemical weather forecasts for field campaign planning: predictions and observations of large-scale features during MINOS, CONTRACE, and INDOEX. *Atmospheric Chemistry and Physics*, **2003**, 3, 267-289	6.8	112
181	. *Tellus, Series B: Chemical and Physical Meteorology*, **2000**, 52, 1025-1056	3.3	103
180	Dust and pollution transport on global scales: Aerosol measurements and model predictions. *Journal of Geophysical Research*, **2001**, 106, 32555-32569		100
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178	Fast and slow responses of the South Asian monsoon system to anthropogenic aerosols. *Geophysical Research Letters*, **2012**, 39,	4.9	95
177	A physically based framework for modeling the organic fractionation of sea spray aerosol from bubble film Langmuir equilibria. *Atmospheric Chemistry and Physics*, **2014**, 14, 13601-13629	6.8	93
176	Direct and semidirect aerosol effects of southern African biomass burning aerosol. *Journal of Geophysical Research*, **2011**, 116,		93
175	Impact of small ice crystal assumptions on ice sedimentation rates in cirrus clouds and GCM simulations. *Geophysical Research Letters*, **2008**, 35,	4.9	93
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173	Uncertainty quantification and parameter tuning in the CAM5 Zhang-McFarlane convection scheme and impact of improved convection on the global circulation and climate. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 395-415	4.4	89
172	Maintenance of the Intertropical Convergence Zones and the Large-Scale Tropical Circulation on a Water-covered Earth. *Journals of the Atmospheric Sciences*, **1993**, 50, 691-713	2.1	88
171	A three-dimensional general circulation model with coupled chemistry for the middle atmosphere. *Journal of Geophysical Research*, **1995**, 100, 9041		87
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167	A multi-model assessment of regional climate disparities caused by solar geoengineering. *Environmental Research Letters*, **2014**, 9, 074013	6.2	77
166	Do biomass burning aerosols intensify drought in equatorial Asia during El Niño?. *Atmospheric Chemistry and Physics*, **2010**, 10, 3515-3528	6.8	77
165	Conservative Shape-Preserving Two-Dimensional Transport on a Spherical Reduced Grid. *Monthly Weather Review*, **1994**, 122, 1337-1350	2.4	76
164	Determining the UV imaginary index of refraction of Saharan dust particles from Total Ozone Mapping Spectrometer data using a three-dimensional model of dust transport. *Journal of Geophysical Research*, **2002**, 107, AAC 4-1		74
163	On Shape-Preserving Interpolation and Semi-Lagrangian Transport. *SIAM Journal on Scientific and Statistical Computing*, **1990**, 11, 656-687		74
162	Using an explicit emission tagging method in global modeling of source-receptor relationships for black carbon in the Arctic: Variations, sources, and transport pathways. *Journal of Geophysical Research D: Atmospheres*, **2014**, 119, 12,888	4.4	72
161	Global Modeling Initiative assessment model: Model description, integration, and testing of the transport shell. *Journal of Geophysical Research*, **2001**, 106, 1669-1691		70
160	Geoengineering as a design problem. *Earth System Dynamics*, **2016**, 7, 469-497	4.8	70
159	Monotone Advection on the Sphere: An Eulerian Versus Semi-Lagrangian Approach. *Journals of the Atmospheric Sciences*, **1991**, 48, 793-810	2.1	66
158	A comparison of scavenging and deposition processes in global models: results from the WCRP Cambridge Workshop of 1995. *Tellus, Series B: Chemical and Physical Meteorology*, **2000**, 52, 1025-1056	3.3	65
157	Parametric sensitivity analysis of precipitation at global and local scales in the Community Atmosphere Model CAM5. *Journal of Advances in Modeling Earth Systems*, **2015**, 7, 382-411	7.1	64
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151	Three-dimensional simulations of long-lived tracers using winds from MACCM2. *Journal of Geophysical Research*, **1997**, 102, 21493-21513		59
150	Evaluation of observed and modelled aerosol lifetimes using radioactive tracers of opportunity and an ensemble of 19 global models. *Atmospheric Chemistry and Physics*, **2016**, 16, 3525-3561	6.8	58

149	Assessing the CAM5 physics suite in the WRF-Chem model: implementation, resolution sensitivity, and a first evaluation for a regional case study. *Geoscientific Model Development*, **2014**, 7, 755-778	6.3	56
148	A sensitivity study on modeling black carbon in snow and its radiative forcing over the Arctic and Northern China. *Environmental Research Letters*, **2014**, 9, 064001	6.2	56
147	Aerosol optical depth increase in partly cloudy conditions. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		56
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144	A three-dimensional simulation of the Antarctic ozone hole: Impact of anthropogenic chlorine on the lower stratosphere and upper troposphere. *Journal of Geophysical Research*, **1997**, 102, 8909-8930		55
143	Characteristics of Atmospheric Transport Using Three Numerical Formulations for Atmospheric Dynamics in a Single GCM Framework. *Journal of Climate*, **2006**, 19, 2243-2266	4.4	55
142	Source attribution of black carbon and its direct radiative forcing in China. *Atmospheric Chemistry and Physics*, **2017**, 17, 4319-4336	6.8	54
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136	Climate statistics from the National Center for Atmospheric Research community climate model CCM2. *Journal of Geophysical Research*, **1994**, 99, 20785		53
135	Improvements to the NCAR CSM-1 for Transient Climate Simulations. *Journal of Climate*, **2001**, 14, 164-179	4.4	52
134	Ecosystem impacts of geoengineering: a review for developing a science plan. *Ambio*, **2012**, 41, 350-69	6.5	51
133	Tracer Transport in Deep Convective Updrafts: Plume Ensemble versus Bulk Formulations. *Journals of the Atmospheric Sciences*, **2005**, 62, 2880-2894	2.1	50
132	Deducing CCl3F emissions using an inverse method and chemical transport models with assimilated winds. *Journal of Geophysical Research*, **1997**, 102, 28153-28168		49

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130	How does increasing horizontal resolution in a global climate model improve the simulation of aerosol-cloud interactions?. *Geophysical Research Letters*, **2015**, 42, 5058-5065	4.9	46
129	Extreme Fire Season in California: A Glimpse Into the Future?. *Bulletin of the American Meteorological Society*, **2015**, 96, S5-S9	6.1	45
128	Black Carbon Amplifies Haze Over the North China Plain by Weakening the East Asian Winter Monsoon. *Geophysical Research Letters*, **2019**, 46, 452-460	4.9	41
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126	Midlatitude Cyclone Compositing to Constrain Climate Model Behavior Using Satellite Observations. *Journal of Climate*, **2008**, 21, 5887-5903	4.4	39
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124	The sensitivity of a general circulation model climate to the moisture transport formulation. *Journal of Geophysical Research*, **1991**, 96, 13123		38
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120	PhysicsDynamics Coupling in Weather, Climate, and Earth System Models: Challenges and Recent Progress. *Monthly Weather Review*, **2018**, 146, 3505-3544	2.4	36
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117	Parametric Sensitivity and Uncertainty Quantification in the Version 1 of E3SM Atmosphere Model Based on Short Perturbed Parameter Ensemble Simulations. *Journal of Geophysical Research D: Atmospheres*, **2018**, 123, 13,046	4.4	34
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114	The seasonal cycle of atmospheric CO2: A study based on the NCAR Community Climate Model (CCM2). *Journal of Geophysical Research*, **1996**, 101, 15079-15097		32

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111	A high resolution global reanalysis highlighting the winter monsoon. Part I, reanalysis fields. *Meteorology and Atmospheric Physics*, **1997**, 64, 123-150	2	31
110	Explicit feedback and the management of uncertainty in meeting climate objectives with solar geoengineering. *Environmental Research Letters*, **2014**, 9, 044006	6.2	30
109	Parameterizing Vertically Coherent Cloud Distributions. *Journals of the Atmospheric Sciences*, **2002**, 59, 2165-2182	2.1	30
108	Evaluation of Clouds in Version 1 of the E3SM Atmosphere Model With Satellite Simulators. *Journal of Advances in Modeling Earth Systems*, **2019**, 11, 1253-1268	7.1	29
107	Geoengineering with stratospheric aerosols: What do we not know after a decade of research?. *Earth's Future*, **2016**, 4, 543-548	7.9	29
106	Sea spray geoengineering experiments in the geoengineering model intercomparison project (GeoMIP): Experimental design and preliminary results. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 11,175-11,186	4.4	29
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102	Impact of the summer 2004 Alaska fires on top of the atmosphere clear-sky radiation fluxes. *Journal of Geophysical Research*, **2008**, 113,		28
101	An Evaluation of ENSO Asymmetry in the Community Climate System Models: A View from the Subsurface. *Journal of Climate*, **2009**, 22, 5933-5961	4.4	27
100	Aerosols in the E3SM Version 1: New Developments and Their Impacts on Radiative Forcing. *Journal of Advances in Modeling Earth Systems*, **2020**, 12, e2019MS001851	7.1	27
99	Observational constraint on cloud susceptibility weakened by aerosol retrieval limitations. *Nature Communications*, **2018**, 9, 2640	17.4	26
98	Source Apportionments of Aerosols and Their Direct Radiative Forcing and Long-Term Trends Over Continental United States. *Earth's Future*, **2018**, 6, 793-808	7.9	26
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92	Impact of numerical choices on water conservation in the E3SM Atmosphere Model version 1 (EAMv1). *Geoscientific Model Development*, **2018**, 11, 1971-1988	6.3	23
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85	Analysis of the CEPEX ozone data using a 3D chemistry-meteorology model. *Quarterly Journal of the Royal Meteorological Society*, **2007**, 125, 2987-3009	6.4	19
84	Atmospheric CO2 simulated by the National Center for Atmospheric Research Community Climate Model: 1. Mean fields and seasonal cycles. *Journal of Geophysical Research*, **1998**, 103, 13213-13235		19
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80	Forcings and feedbacks in the GeoMIP ensemble for a reduction in solar irradiance and increase in CO2. *Journal of Geophysical Research D: Atmospheres*, **2014**, 119, 5226-5239	4.4	18
79	A Source–Receptor Perspective on the Polar Hydrologic Cycle: Sources, Seasonality, and Arctic–Antarctic Parity in the Hydrologic Cycle Response to CO2 Doubling. *Journal of Climate*, **2017**, 30, 9999-10017	4.4	17
78	Radiative forcing of the direct aerosol effect from AeroCom Phase II simulations		17

77	Local Radiative Feedbacks Over the Arctic Based on Observed Short-Term Climate Variations. *Geophysical Research Letters*, **2018**, 45, 5761-5770	4.9	16
76	Integrating and Interpreting Aerosol Observations and Models within the PARAGON Framework. *Bulletin of the American Meteorological Society*, **2004**, 85, 1523-1534	6.1	16
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