Stephen E Schwartz

List of Publications by Year
in descending order

129 papers	12,054 citations	46984 47 h-index	29127 104 g-index
148 all docs	148 docs citations	148 times ranked	8035 citing authors

#	Article	IF	Citations
1	Climate Forcing by Anthropogenic Aerosols. Science, 1992, 255, 423-430.	6.0	3,196
2	The Atmospheric Radiation Measurement (ARM) Program: Programmatic Background and Design of the Cloud and Radiation Test Bed. Bulletin of the American Meteorological Society, 1994, 75, 1201-1221.	1.7	692
3	Production flux of sea spray aerosol. Reviews of Geophysics, 2011, 49, .	9.0	458
4	Bounding Global Aerosol Radiative Forcing of Climate Change. Reviews of Geophysics, 2020, 58, e2019RG000660.	9.0	424
5	Mass-Transport Considerations Pertinent to Aqueous Phase Reactions of Gases in Liquid-Water Clouds. , 1986, , 415-471.		363
6	Quantifying and Minimizing Uncertainty of Climate Forcing by Anthropogenic Aerosols. Bulletin of the American Meteorological Society, 1994, 75, 375-400.	1.7	345
7	ATMOSPHERIC SCIENCE: Climate Forcing by Aerosol--a Hazy Picture. Science, 2003, 300, 1103-1104.	6.0	323
8	The whitehouse effectâ€"Shortwave radiative forcing of climate by anthropogenic aerosols: an overview. Journal of Aerosol Science, 1996, 27, 359-382.	1.8	249
9	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.	3.3	243
10	Are global cloud albedo and climate controlled by marine phytoplankton?. Nature, 1988, 336, 441-445.	13.7	226
11	New unbiased symmetric metrics for evaluation of air quality models. Atmospheric Science Letters, 2006, 7, 26-34.	0.8	226
12	Aerosol Properties and Processes: A Path from Field and Laboratory Measurements to Global Climate Models. Bulletin of the American Meteorological Society, 2007, 88, 1059-1084.	1.7	198
13	Reaction kinetics of nitrogen dioxide with liquid water at low partial pressure. The Journal of Physical Chemistry, 1981, 85, 840-848.	2.9	195
14	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.	3.3	170
15	MATRIX (Multiconfiguration Aerosol TRacker of mIXing state): an aerosol microphysical module for global atmospheric models. Atmospheric Chemistry and Physics, 2008, 8, 6003-6035.	1.9	166
16	Direct aerosol forcing: Calculation from observables and sensitivities to inputs. Journal of Geophysical Research, 2008, 113, .	3.3	157
17	Uncertainty in Climate Change Caused by Aerosols. Science, 1996, 272, 1121-0.	6.0	151
18	Gasâ€•and aqueousâ€phase chemistry of HO₂ in liquid water clouds. Journal of Geophysical Research, 1984, 89, 11589-11598.	3.3	148

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19	Direct shortwave forcing of climate by the anthropogenic sulfate aerosol: Sensitivity to particle size, composition, and relative humidity. Journal of Geophysical Research, 1995, 100, 26105.	3.3	144
20	Acid Deposition: Unraveling a Regional Phenomenon. Science, 1989, 243, 753-763.	6.0	143
21	Evaluation of the rate of uptake of nitrogen dioxide by atmospheric and surface liquid water. Journal of Geophysical Research, 1981, 86, 11971-11983.	3.3	141
22	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.	1.9	135
23	Measurements of peroxides in cloudwater and rain. Journal of Geophysical Research, 1985, 90, 7861-7871.	3.3	134
24	Measurements of the chemical composition of stratiform clouds. Atmospheric Environment, 1984, 18, 2671-2684.	1.1	127
25	Intercomparison of models representing direct shortwave radiative forcing by sulfate aerosols. Journal of Geophysical Research, 1998, 103, 16979-16998.	3.3	124
26	Sulfate over the North Atlantic and adjacent continental regions: Evaluation for October and November 1986 using a three-dimensonal model driven by observation-derived meteorology. Journal of Geophysical Research, 1994, 99, 20725.	3.3	114
27	Heat capacity, time constant, and sensitivity of Earth's climate system. Journal of Geophysical Research, 2007, 112, .	3.3	114
28	Kinetics of Nitrogen Dioxide Fluorescence. Journal of Chemical Physics, 1969, 51, 1286-1302.	1.2	105
29	Climate change and greenhouse gases. Eos, 1999, 80, 453-458.	0.1	96
30	Effective radius of cloud droplets by ground-based remote sensing: Relationship to aerosol. Journal of Geophysical Research, 2003, 108, .	3.3	96
31	Uncertainty in climate sensitivity: Causes, consequences, challenges. Energy and Environmental Science, 2008, 1, 430.	15.6	94
32	Hydrolysis equilibrium of dinitrogen trioxide in dilute acid solution. Inorganic Chemistry, 1981, 20, 445-450.	1.9	88
33	Intercomparison of shortwave radiative transfer codes and measurements. Journal of Geophysical Research, 2005, 110, .	3.3	88
34	Influence of anthropogenic aerosol on cloud optical depth and albedo shown by satellite measurements and chemical transport modeling. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 1784-1789.	3.3	87
35	The role of adiabaticity in the aerosol first indirect effect. Journal of Geophysical Research, 2008, 113, .	3.3	87
36	Acidic and related constituents in liquid water stratiform clouds. Journal of Geophysical Research, 1984, 89, 1447-1458.	3.3	86

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37	Why Hasnâ€™t Earth Warmed as Much as Expected?. Journal of Climate, 2010, 23, 2453-2464.	1.2	78
38	Observing and Modeling Earthâ€™s Energy Flows. Surveys in Geophysics, 2012, 33, 779-816.	2.1	77
39	Models overestimate diffuse clear-sky surface irradiance: A case for excess atmospheric absorption. Geophysical Research Letters, 1998, 25, 3591-3594.	1.5	75
40	Properties and evolution of aerosols with size distributions having identical moments. Journal of Aerosol Science, 1998, 29, 761-772.	1.8	71
41	Determination of Earthâ€™s Transient and Equilibrium Climate Sensitivities from Observations Over the Twentieth Century: Strong Dependence on Assumed Forcing. Surveys in Geophysics, 2012, 33, 745-777.	2.1	71
42	Uncertainty Requirements in Radiative Forcing of Climate Change. Journal of the Air and Waste Management Association, 2004, 54, 1351-1359.	0.9	69
43	Evaporation of Ammonium Nitrate Aerosol in a Heated Nephelometer:Â Implications for Field Measurements. Environmental Science & Technology, 1997, 31, 2878-2883.	4.6	68
44	Mass-transport limitation to the rate of in-cloud oxidation of SO2: Re-examination in the light of new data. Atmospheric Environment, 1988, 22, 2491-2499.	1.1	63
45	Field observations in continental stratiform clouds: Partitioning of cloud particles between droplets and unactivated interstitial aerosols. Journal of Geophysical Research, 1995, 100, 18687.	3.3	62
46	PARAGON: An Integrated Approach for Characterizing Aerosol Climate Impacts and Environmental Interactions. Bulletin of the American Meteorological Society, 2004, 85, 1491-1502.	1.7	59
47	Comparison of model-estimated and measured diffuse downward irradiance at surface in cloud-free skies. Journal of Geophysical Research, 2000, 105, 20165-20177.	3.3	52
48	Comparison of model estimated and measured direct-normal solar irradiance. Journal of Geophysical Research, 1997, 102, 29991-30002.	3.3	49
49	Comparison of aerosol optical depth inferred from surface measurements with that determined by Sun photometry for cloud-free conditions at a continental U.S. site. Journal of Geophysical Research, 2000, 105, 6807-6816.	3.3	46
50	Climatology of aerosol optical depth in northâ€central Oklahoma: 1992â€“2008. Journal of Geophysical Research, 2010, 115, .	3.3	45
51	Oxidation of SO2 in aqueous droplets: Mass-transport limitation in laboratory studies and the ambient atmosphere. Atmospheric Environment, 1981, 15, 1145-1154.	1.1	44
52	Enhanced Shortwave Cloud Radiative Forcing Due To Anthropogenic Aerosols. , 1996, , 191-236.		44
53	Comment on â€œsize distribution of sea-salt emissions as a function of relative humidityâ€. Atmospheric Environment, 2006, 40, 588-590.	1.9	43
54	The scavenging of nitrate by clouds and precipitation. Journal of Atmospheric Chemistry, 1995, 20, 259-280.	1.4	37

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55	Kinetics of hydrogen peroxideâ€sulfur(IV) reaction in rainwater collected at a northeastern U.S. site. Journal of Geophysical Research, 1986, 91, 13264-13274.	3.3	34
56	Aerosol Influence on Cloud Microphysics Examined by Satellite Measurements and Chemical Transport Modeling. Journals of the Atmospheric Sciences, 2002, 59, 714-725.	0.6	34
57	Climate response to radiative forcings by sulfate aerosols and greenhouse gases. Geophysical Research Letters, 1995, 22, 2509-2512.	1.5	33
58	Reversible uptake of water on NaCl nanoparticles at relative humidity below deliquescence point observed by noncontact environmental atomic force microscopy. Journal of Chemical Physics, 2011, 134, 044702.	1.2	33
59	Seasonal, latitudinal, and secular variations in temperature trend: Evidence for influence of anthropogenic sulfate. Geophysical Research Letters, 1993, 20, 2455-2458.	1.5	32
60	Evaluation of modeled sulfate and SO2over North America and Europe for four seasonal months in 1986-1987. Journal of Geophysical Research, 1997, 102, 25305-25338.	3.3	32
61	Quantifying climate change â€" too rosy a picture?. Nature Climate Change, 2007, 1, 23-24.	8.1	32
62	Low-intensity radiolysis study of free-radical reactions in cloudwater: hydrogen peroxide production and destruction. Environmental Science & Technology, 1991, 25, 791-800.	4.6	31
63	Retrieval of aerosol properties from moments of the particle size distribution for kernels involving the step function: cloud droplet activation. Journal of Aerosol Science, 2002, 33, 319-337.	1.8	30
64	The Parasol Effect on Climate. Science, 2003, 302, 1679-1681.	6.0	30
65	Moment-based simulation of microphysical properties of sulfate aerosols in the eastern United States: Model description, evaluation, and regional analysis. Journal of Geophysical Research, 2003, 108, .	3.3	29
66	Six-moment representation of multiple aerosol populations in a sub-hemispheric chemical transformation model. Geophysical Research Letters, 2000, 27, 967-970.	1.5	28
67	Reply to comments by G. Foster et al., R. Knutti et al., and N. Scafetta on â€œHeat capacity, time constant, and sensitivity of Earth's climate systemâ€• Journal of Geophysical Research, 2008, 113, .	3.3	28
68	Optical properties of atmospheric aerosols from moments of the particle size distribution. Geophysical Research Letters, 1995, 22, 2929-2932.	1.5	26
69	Description and evaluation of a six-moment aerosol microphysical module for use in atmospheric chemical transport models. Journal of Geophysical Research, 2001, 106, 20275-20291.	3.3	26
70	Feedback and sensitivity in an electrical circuit: an analog for climate models. Climatic Change, 2011, 106, 315-326.	1.7	26
71	Units for use in atmospheric chemistry (IUPAC Recommendations 1995). Pure and Applied Chemistry, 1995, 67, 1377-1406.	0.9	25
72	ATMOSPHERIC SCIENCE:Absorbing Phenomena. Science, 2000, 288, 989-990.	6.0	25

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73	Aerosol Optical Depth over Oceans: High Space- and Time-Resolution Retrieval and Error Budget from Satellite Radiometry. Journal of Atmospheric and Oceanic Technology, 1997, 14, 577-590.	0.5	24
74	Modeling atmospheric sulfur over the Northern Hemisphere during the Aerosol Characterization Experiment 2 experimental period. Journal of Geophysical Research, 2004, 109, n/a-n/a.	3.3	23
75	Preface to special section: Atmospheric Radiation Measurement Program May 2003 Intensive Operations Period examining aerosol properties and radiative influences. Journal of Geophysical Research, 2006, 111, .	3.3	23
76	Processes limiting oxidation of sulfur dioxide in stack plumes. Environmental Science & Technology, 1978, 12, 67-73.	4.6	22
77	Mass-transport limitation to the rate of reaction of gases in liquid droplets: application to oxidation of so2 in aqueous solutionsâ˜†. Atmospheric Environment, 2007, 41, 138-153.	1.9	22
78	Current Understanding and Quantification of Clouds in the Changing Climate System and Strategies for Reducing Critical Uncertainties. , 2009, , 557-574.		22
79	The Franck-Condon principle and the duration of electronic transitions. Journal of Chemical Education, 1973, 50, 608.	1.1	21
80	Residence times in reservoirs under non-steady-state conditions: application to atmospheric SO2 and aerosol sulfate. Tellus, 2022, 31, 530.	0.4	21
81	Residence times in reservoirs under non-steady-state conditions: application to atmospheric SO₂and aerosol sulfate. Tellus, 1979, 31, 530-547.	0.4	20
82	Sulphate aerosols and climate. Nature, 1989, 340, 515-516.	13.7	17
83	Scientific Objectives, Measurement Needs, and Challenges Motivating the PARAGON Aerosol Initiative. Bulletin of the American Meteorological Society, 2004, 85, 1503-1510.	1.7	17
84	Response. Science, 1992, 256, 598-599.	6.0	16
85	Determination of a lower bound on Earthâ€™s climate sensitivity. Tellus, Series B: Chemical and Physical Meteorology, 2022, 65, 21533.	0.8	16
86	Conversion of sulfur dioxide to sulfate during the da vinci flights. Atmospheric Environment, 1979, 13, 157-167.	1.1	15
87	Aqueous-Phase Reactions in Clouds. ACS Symposium Series, 1987, , 93-108.	0.5	15
88	Does fossil fuel combustion lead to global warming?. Energy, 1993, 18, 1229-1248.	4.5	15
89	Sensitivity of aerosol properties to new particle formation mechanism and to primary emissions in a continentalâ€scale chemical transport model. Journal of Geophysical Research, 2009, 114, .	3.3	15
90	Highâ€resolution photography of clouds from the surface: Retrieval of optical depth of thin clouds down to centimeter scales. Journal of Geophysical Research D: Atmospheres, 2017, 122, 2898-2928.	1.2	15

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91	Comment on "Resonant fluorescence and Raman scattering". Physical Review A, 1975, 11, 1121-1122.	1.0	14
92	Pulseâ€toâ€Analog Converter for Optimizing Signalâ€toâ€Noise from Photomultipliers at Low Light Intensities. Review of Scientific Instruments, 1968, 39, 715-718.	0.6	13
93	Earth's Climate Sensitivity: Apparent Inconsistencies in Recent Assessments. Earth's Future, 2014, 2, 601-605.	2.4	13
94	Detectability of acid producing reactions in natural clouds. Atmospheric Environment, 1989, 23, 569-583.	1.1	12
95	Assessment of uncertainties in the projected concentrations of methane in the atmosphere (Technical) Tj ETQq1 1 0.784314 rgBT /Over	0.9	12
96	Laboratory study of NO2 reaction with DISPERSED and bulk liquid water. Atmospheric Environment, 1995, 29, 2557-2559.	1.9	11
97	Attribution of modeled atmospheric sulfate and SO₂ in the Northern Hemisphere for Juneâ€"July 1997. Atmospheric Chemistry and Physics, 2006, 6, 4723-4738.	1.9	11
98	Observation of ambient aerosol particle growth due to inâ€cloud processes within boundary layers. Journal of Geophysical Research, 2007, 112, .	3.3	10
99	An Efficient Intracavity Laser Raman Spectrometer. Applied Spectroscopy, 1978, 32, 298-302.	1.2	8
100	Dynamical influences on the distribution and loading of SO2and sulfate over North America, the North Atlantic, and Europe in April 1987. Geochemistry, Geophysics, Geosystems, 2001, 2, n/a-n/a.	1.0	8
101	Both Sides Now.. Annals of the New York Academy of Sciences, 1987, 502, 83-144.	1.8	7
102	Measurements of sulfate production in natural clouds. Atmospheric Environment, 1983, 17, 2629-2632.	1.1	6
103	Evaluation of a chemical transport model for sulfate using ACE-2 observations and attribution of sulfate mixing ratios to source regions and formation processes. Geophysical Research Letters, 2003, 30, .	1.5	5
104	Unrealized Global Temperature Increase: Implications of Current Uncertainties. Journal of Geophysical Research D: Atmospheres, 2018, 123, 3462-3482.	1.2	5
105	Cloud droplet nucleation and its connection to aerosol properties. , 1996, , 770-779.		5
106	Uncertainty in Climate Models. Science, 2002, 296, 2139c-2140.	6.0	5
107	Aerosols and Clouds in Chemical Transport Models and Climate Models. , 2009, , 531-556.		5
108	Observing and Modeling Earthâ€™s Energy Flows. Space Sciences Series of ISSI, 2012, , 447-484.	0.0	3

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109	Attempted Measurement of Gaseous H2O2 in the Ambient Atmosphere. , 1984, , 20-26.		3
110	Probability of committed warming exceeding 1.5 ^{â˜}C and 2.0 ^{â˜}C Paris targets. Environmental Research Letters, 2022, 17, 064022.	2.2	3
111	Measurements of sulfate production in natural clouds. Atmospheric Environment, 1984, 18, 883-885.	1.1	2
112	Chemistry with a silver lining. Nature, 1990, 343, 209-210.	13.7	2
113	The characteristic time to achieve interfacial phase equilibrium in cloud drops. Atmospheric Environment Part A General Topics, 1990, 24, 2892-2893.	1.3	2
114	Alternosorptionâ€”II. Journal of Inorganic and Nuclear Chemistry, 1967, 29, 1559-1563.	0.5	1
115	Determination of the equivalence point of the atomic nitrogen + mononitrogen monoxide titration reaction by electrical conduction. The Journal of Physical Chemistry, 1974, 78, 1120-1126.	2.9	1
116	Integrating-Sphere Fluorescence Cells: Instrumental Errors in Fluorescence Lifetimes and Intensities. Applied Optics, 1975, 14, 1143.	2.1	1
117	Sulfate and nitrate chemistry in cumuliform clouds. Atmospheric Environment, 1987, 21, 1865-1866.	1.1	1
118	Reply to â€œComments on â€˜Why Hasn't Earth Warmed as Much as Expected?â€™â€ Journal of Climate, 2012, 25, 2200-2204.	1.2	1
119	Aircraft Release of Sulfur Hexafluoride as an Atmospheric Tracer. Journal of the Air Pollution Control Association, 1985, 35, 555-557.	0.5	0
120	Further discussion. Atmospheric Environment, 1987, 21, 1866-1867.	1.1	0
121	Air-sea interface chemistry of reactive gases. Applied Geochemistry, 1988, 3, 65.	1.4	0
122	Response: Acid Rain Models. Science, 1989, 244, 127-128.	6.0	0
123	Hit or miss?. Nature, 1992, 355, 196-196.	13.7	0
124	From aerosol microphysics to geophysics using the method of moments. AIP Conference Proceedings, 2000, , .	0.3	0
125	James P. Lodge, Jr.: a tribute to an editor. Atmospheric Environment, 2003, 37, 1160.	1.9	0
126	A Fool's Errand: How Not to Conduct a Research Solicitation. Eos, 2010, 91, 111-111.	0.1	0

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127	Diverse views on climate change. Eos, 2012, 93, 157-157.	0.1	0
128	Optical instruments synergy in determination of optical depth of thin clouds. EPJ Web of Conferences, 2018, 176, 08008.	0.1	0
129	Determination of Earthâ€™s Transient and Equilibrium Climate Sensitivities from Observations Over the Twentieth Century: Strong Dependence on Assumed Forcing. Space Sciences Series of ISSI, 2012, , 413-445.	0.0	0