William R Simpson

List of Publications by Year
in descending order

85 papers	6,980 citations	76196 40 h-index	64668 79 g-index
126 all docs	126 docs citations	126 times ranked	4913 citing authors

#	Article	IF	Citations
1	Improved calibration procedures for the EM27/SUN spectrometers of the COllaborative Carbon Column Observing Network (COCCON). Atmospheric Measurement Techniques, 2022, 15, 2433-2463.	1.2	10
2	Differences in Ozone and Particulate Matter Between Ground Level and 20Âm Aloft are Frequent During Wintertime Surfaceâ€Based Temperature Inversions in Fairbanks, Alaska. Journal of Geophysical Research D: Atmospheres, 2022, 127, .	1.2	8
3	Source and Chemistry of Hydroxymethanesulfonate (HMS) in Fairbanks, Alaska. Environmental Science & Technology, 2022, 56, 7657-7667.	4.6	14
4	Source and variability of formaldehyde (HCHO) at northern high latitudes: an integrated satellite, aircraft, and model study. Atmospheric Chemistry and Physics, 2022, 22, 7163-7178.	1.9	9
5	Evaluation of the Stratospheric and Tropospheric Bromine Burden Over Fairbanks, Alaska Based on Column Retrievals of Bromine Monoxide. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD032896.	1.2	1
6	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.	1.7	14
7	The Copernicus Sentinel-6 mission: Enhanced continuity of satellite sea level measurements from space. Remote Sensing of Environment, 2021, 258, 112395.	4.6	64
8	Implementation and Impacts of Surface and Blowing Snow Sources of Arctic Bromine Activation Within WRFâ€Chem 4.1.1. Journal of Advances in Modeling Earth Systems, 2021, 13, e2020MS002391.	1.3	23
9	Spatial distributions of <i>X</i>_{CO₂} seasonal cycle amplitude and phase over northern high-latitude regions. Atmospheric Chemistry and Physics, 2021, 21, 16661-16687.	1.9	10
10	Arctic Reactive Bromine Events Occur in Two Distinct Sets of Environmental Conditions: A Statistical Analysis of 6ÂYears of Observations. Journal of Geophysical Research D: Atmospheres, 2020, 125, e2019JD032139.	1.2	9
11	Trace Gases in the Arctic Atmosphere. Springer Polar Sciences, 2020, , 153-207.	0.0	1
12	Quality controls, bias, and seasonality of CO₂ columns in the boreal forest with Orbiting Carbon Observatory-2, Total Carbon Column Observing Network, and EM27/SUN measurements. Atmospheric Measurement Techniques, 2020, 13, 5033-5063.	1.2	22
13	Springtime Nitrogen Oxide-Influenced Chlorine Chemistry in the Coastal Arctic. Environmental Science & Technology, 2019, 53, 8057-8067.	4.6	28
14	The Atmospheric Imaging Mission for Northern Regions: AIM-North. Canadian Journal of Remote Sensing, 2019, 45, 423-442.	1.1	14
15	Local Arctic Air Pollution: A Neglected but Serious Problem. Earth's Future, 2018, 6, 1385-1412.	2.4	96
16	Springtime Bromine Activation over Coastal and Inland Arctic Snowpacks. ACS Earth and Space Chemistry, 2018, 2, 1075-1086.	1.2	22
17	Polar Nighttime Chemistry Produces Intense Reactive Bromine Events. Geophysical Research Letters, 2018, 45, 9987-9994.	1.5	10
18	Observations of bromine monoxide transport in the Arctic sustained on aerosol particles. Atmospheric Chemistry and Physics, 2017, 17, 7567-7579.	1.9	44

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19	Horizontal and vertical structure of reactive bromine events probed by bromine monoxide MAX-DOAS. Atmospheric Chemistry and Physics, 2017, 17, 9291-9309.	1.9	27
20	Snowmelt onset hinders bromine monoxide heterogeneous recycling in the Arctic. Journal of Geophysical Research D: Atmospheres, 2017, 122, 8297-8309.	1.2	24
21	Variability of bromine monoxide at Barrow, Alaska, over four halogen activation (Marchâ€œMay) seasons and at two onâ€ice locations. Journal of Geophysical Research D: Atmospheres, 2016, 121, 1381-1396.	1.2	15
22	The role of open lead interactions in atmospheric ozone variability between Arctic coastal and inland sites. Elementa, 2016, 4, .	1.1	6
23	Dependence of the vertical distribution of bromine monoxide in the lower troposphere on meteorological factors such as wind speed and stability. Atmospheric Chemistry and Physics, 2015, 15, 2119-2137.	1.9	41
24	The NO_{<i>x</i>} dependence of bromine chemistry in the Arctic atmospheric boundary layer. Atmospheric Chemistry and Physics, 2015, 15, 10799-10809.	1.9	23
25	Tropospheric Halogen Chemistry: Sources, Cycling, and Impacts. Chemical Reviews, 2015, 115, 4035-4062.	23.0	344
26	The Heidelberg Airborne Imaging DOAS Instrument (HAIDI) â€œ a novel imaging DOAS device for 2-D and 3-D imaging of trace gases and aerosols. Atmospheric Measurement Techniques, 2014, 7, 3459-3485.	1.2	33
27	Implications of Arctic Sea Ice Decline for the Earth System. Annual Review of Environment and Resources, 2014, 39, 57-89.	5.6	82
28	Temporal and spatial characteristics of ozone depletion events from measurements in the Arctic. Atmospheric Chemistry and Physics, 2014, 14, 4875-4894.	1.9	40
29	The fate of NO_x emissions due to nocturnal oxidation at high latitudes: 1-D simulations and sensitivity experiments. Atmospheric Chemistry and Physics, 2014, 14, 7601-7616.	1.9	15
30	Studying Bromine, Ozone, and Mercury Chemistry in the Arctic. Eos, 2013, 94, 289-291.	0.1	23
31	Photochemical production of molecular bromine in Arctic surface snowpacks. Nature Geoscience, 2013, 6, 351-356.	5.4	175
32	Intercomparison of NO₃ radical detection instruments in the atmosphere simulation chamber SAPHIR. Atmospheric Measurement Techniques, 2013, 6, 1111-1140.	1.2	49
33	Comparison of N₂O₅ mixing ratios during NO3Comp 2007 in SAPHIR. Atmospheric Measurement Techniques, 2012, 5, 2763-2777.	1.2	21
34	The chemical composition of surface snow in the Arctic: Examining marine, terrestrial, and atmospheric influences. Atmospheric Environment, 2012, 50, 349-359.	1.9	79
35	Deposition of dinitrogen pentoxide, N₂O₅, to the snowpack at high latitudes. Atmospheric Chemistry and Physics, 2011, 11, 4929-4938.	1.9	22
36	Acetaldehyde in the Alaskan subarctic snowpack. Atmospheric Chemistry and Physics, 2010, 10, 919-929.	1.9	18

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37	A low power automated MAX-DOAS instrument for the Arctic and other remote unmanned locations. Atmospheric Measurement Techniques, 2010, 3, 429-439.	1.2	18
38	Development of an autonomous sea ice tethered buoy for the study of ocean-atmosphere-sea ice-snow pack interactions: the O-buoy. Atmospheric Measurement Techniques, 2010, 3, 249-261.	1.2	42
39	A new interpretation of total column BrO during Arctic spring. Geophysical Research Letters, 2010, 37, .	1.5	116
40	Simulation of the specific surface area of snow using a one-dimensional physical snowpack model: implementation and evaluation for subarctic snow in Alaska. Cryosphere, 2010, 4, 35-51.	1.5	28
41	Frost flower chemical composition during growth and its implications for aerosol production and bromine activation. Journal of Geophysical Research, 2008, 113, .	3.3	60
42	Influence of Snow and Ice Crystal Formation and Accumulation on Mercury Deposition to the Arctic. Environmental Science & Technology, 2008, 42, 1542-1551.	4.6	101
43	Snow physics as relevant to snow photochemistry. Atmospheric Chemistry and Physics, 2008, 8, 171-208.	1.9	259
44	The role of ice in N₂O₅ heterogeneous hydrolysis at high latitudes. Atmospheric Chemistry and Physics, 2008, 8, 7451-7463.	1.9	27
45	An overview of snow photochemistry: evidence, mechanisms and impacts. Atmospheric Chemistry and Physics, 2007, 7, 4329-4373.	1.9	554
46	Halogens and their role in polar boundary-layer ozone depletion. Atmospheric Chemistry and Physics, 2007, 7, 4375-4418.	1.9	593
47	First-year sea-ice contact predicts bromine monoxide (BrO) levels at Barrow, Alaska better than potential frost flower contact. Atmospheric Chemistry and Physics, 2007, 7, 621-627.	1.9	157
48	Wavelength Dependence of Nitrate Radical Quantum Yield from Peroxyacetyl Nitrate Photolysis:â€‰ Experimental and Theoretical Studies. Journal of Physical Chemistry A, 2007, 111, 11602-11607.	1.1	4
49	A parameterization of the specific surface area of seasonal snow for field use and for models of snowpack evolution. Journal of Geophysical Research, 2007, 112, .	3.3	119
50	Rate of decrease of the specific surface area of dry snow: Isothermal and temperature gradient conditions. Journal of Geophysical Research, 2007, 112, .	3.3	87
51	Measurements of N2O5near Fairbanks, Alaska. Journal of Geophysical Research, 2006, 111, .	3.3	31
52	Evolution of the Snow Area Index of the Subarctic Snowpack in Central Alaska over a Whole Season. Consequences for the Air to Snow Transfer of Pollutants. Environmental Science & Technology, 2006, 40, 7521-7527.	4.6	55
53	Nitrate Radical Quantum Yield from Peroxyacetyl Nitrate Photolysis. Journal of Physical Chemistry A, 2005, 109, 2552-2558.	1.1	8
54	Off-axis cavity ringdown spectroscopy: application to atmospheric nitrate radical detection. Applied Optics, 2005, 44, 7239.	2.1	50

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55	Halogens in the coastal snow pack near Barrow, Alaska: Evidence for active bromine air-snow chemistry during springtime. Geophysical Research Letters, 2005, 32, n/a-n/a.	1.5	104
56	Elevated mercury measured in snow and frost flowers near Arctic sea ice leads. Geophysical Research Letters, 2005, 32, n/a-n/a.	1.5	65
57	Verification of snowpack radiation transfer models using actinometry. Journal of Geophysical Research, 2005, 110, .	3.3	40
58	Specific surface area, density and microstructure of frost flowers. Geophysical Research Letters, 2005, 32, .	1.5	70
59	Continuous wave cavity ring-down spectroscopy applied toin situdetection of dinitrogen pentoxide (N2O5). Review of Scientific Instruments, 2003, 74, 3442-3452.	0.6	81
60	NOx during background and ozone depletion periods at Alert: Fluxes above the snow surface. Journal of Geophysical Research, 2002, 107, ACH 7-1-ACH 7-12.	3.3	80
61	Snow-pile and chamber experiments during the Polar Sunrise Experiment â€˜Alert 2000â€™: exploration of nitrogen chemistry. Atmospheric Environment, 2002, 36, 2707-2719.	1.9	77
62	Atmospheric photolysis rate coefficients during the Polar Sunrise Experiment ALERT2000. Atmospheric Environment, 2002, 36, 2471-2480.	1.9	18
63	Radiation-transfer modeling of snow-pack photochemical processes during ALERT 2000. Atmospheric Environment, 2002, 36, 2663-2670.	1.9	68
64	A study of photochemical and physical processes affecting carbonyl compounds in the Arctic atmospheric boundary layer. Atmospheric Environment, 2002, 36, 2733-2742.	1.9	97
65	Extinction of UV radiation in Arctic snow at Alert, Canada (82Â°N). Journal of Geophysical Research, 2001, 106, 12499-12507.	3.3	107
66	Observations of ozone and related species in the northeast Pacific during the PHOBEA campaigns: 1. Ground-based observations at Cheeka Peak. Journal of Geophysical Research, 2001, 106, 7449-7461.	3.3	79
67	Snowpack photochemical production of HONO: A major source of OH in the Arctic boundary layer in springtime. Geophysical Research Letters, 2001, 28, 4087-4090.	1.5	237
68	Relating State-Dependent Cross Sections to Non-Arrhenius Behavior for the Cl + CH4Reactionâ€. Journal of Physical Chemistry A, 2001, 105, 1476-1488.	1.1	40
69	A new method for the atmospheric detection of the nitrate radical (NO3). Atmospheric Environment, 2000, 34, 685-688.	1.9	59
70	Time-resolved Raman spectroscopy with a tunable ultraviolet kilohertz nanosecond laser. Journal of Raman Spectroscopy, 1999, 30, 773-776.	1.2	19
71	Transport of Asian air pollution to North America. Geophysical Research Letters, 1999, 26, 711-714.	1.5	534
72	Intercomparison of total ozone observations at Fairbanks, Alaska, during POLARIS. Journal of Geophysical Research, 1999, 104, 26767-26778.	3.3	10

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73	Frequency-matched cavity ring-down spectroscopy. Chemical Physics Letters, 1998, 297, 523-529.	1.2	69
74	Scattering-angle resolved product rotational alignment for the reaction of Cl with vibrationally excited methane. Journal of Chemical Physics, 1997, 106, 5961-5971.	1.2	100
75	Picturing the Transition-State Region and Understanding Vibrational Enhancement for the Cl + CH4â†' HCl + CH3Reaction. The Journal of Physical Chemistry, 1996, 100, 7938-7947.	2.9	143
76	Reaction of Cl with vibrationally excited CH4 and CHD3: Stateâ€toâ€state differential cross sections and steric effects for the HCl product. Journal of Chemical Physics, 1995, 103, 7313-7335.	1.2	228
77	Core extraction for measuring stateâ€toâ€state differential cross sections of bimolecular reactions. Journal of Chemical Physics, 1995, 103, 7299-7312.	1.2	114
78	State-to-state differential cross sections from photoinitiated bulb reactions. Chemical Physics Letters, 1993, 212, 155-162.	1.2	108
79	State-to-state differential cross sections for the reaction Cl (2P32) + CH4 (Î½3 = 1, J = 1) â†' HCl (vâ€² = 1, Jâ€²) + CH3. Chemical Physics Letters, 1993, 212, 163-171.	1.2	148
80	<title>State-to-state dynamics and doubly differential cross sections of the reaction of chlorine atoms with CH4(v3=1, J)</title>. , 1993, , .		1
81	Effect of reagent vibration on the hydrogen atom + water-d reaction: an example of bond-specific chemistry. The Journal of Physical Chemistry, 1993, 97, 2194-2203.	2.9	138
82	Comparison of reagent stretch vs bend excitation in the hydrogen atom + water-d2 reaction: an example of mode-selective chemistry. The Journal of Physical Chemistry, 1993, 97, 2204-2208.	2.9	96
83	Bondâ€specific chemistry: OD:OH product ratios for the reactions H+HOD(100) and H+HOD(001). Journal of Chemical Physics, 1991, 95, 8647-8648.	1.2	217
84	The spectroscopy andAstate dynamics of the NeIBr van der Waals complex. Journal of Chemical Physics, 1989, 90, 3171-3180.	1.2	10
85	Laser-induced fluorescence of jet-cooled IBr: B3.PI.0+ .rarw. X1.SIGMA.+ excitation spectra. The Journal of Physical Chemistry, 1989, 93, 2310-2313.	2.9	5