Luke D Oman

List of Publications by Year
in descending order

118 papers	5,981 citations	61857 43 h-index	91712 69 g-index
135 all docs	135 docs citations	135 times ranked	5247 citing authors

#	Article	IF	Citations
1	Regional climate responses to geoengineering with tropical and Arctic SO₂ injections. Journal of Geophysical Research, 2008, 113, .	3.3	339
2	Review of the global models used within phase 1 of the Chemistryâ€“Climate Model Initiative (CCMI). Geoscientific Model Development, 2017, 10, 639-671.	1.3	277
3	An overview of geoengineering of climate using stratospheric sulphate aerosols. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2008, 366, 4007-4037.	1.6	251
4	Multi-model assessment of stratospheric ozone return dates and ozone recovery in CCMVal-2 models. Atmospheric Chemistry and Physics, 2010, 10, 9451-9472.	1.9	215
5	What would have happened to the ozone layer if chlorofluorocarbons (CFCs) had not been regulated?. Atmospheric Chemistry and Physics, 2009, 9, 2113-2128.	1.9	165
6	Climatic response to high-latitude volcanic eruptions. Journal of Geophysical Research, 2005, 110, .	3.3	157
7	Measuring and modeling the lifetime of nitrous oxide including its variability. Journal of Geophysical Research D: Atmospheres, 2015, 120, 5693-5705.	1.2	151
8	High-latitude eruptions cast shadow over the African monsoon and the flow of the Nile. Geophysical Research Letters, 2006, 33, n/a-n/a.	1.5	144
9	Did the Toba volcanic eruption of âˆ¼74 ka B.P. produce widespread glaciation?. Journal of Geophysical Research, 2009, 114, .	3.3	136
10	Estimates of ozone return dates from Chemistry-Climate Model Initiative simulations. Atmospheric Chemistry and Physics, 2018, 18, 8409-8438.	1.9	128
11	Nuclear winter revisited with a modern climate model and current nuclear arsenals: Still catastrophic consequences. Journal of Geophysical Research, 2007, 112, .	3.3	120
12	Trends in global tropospheric ozone inferred from a composite record of TOMS/OMI/MLS/OMPS satellite measurements and the MERRA-2 GMI simulation. Atmospheric Chemistry and Physics, 2019, 19, 3257-3269.	1.9	119
13	Modeling the distribution of the volcanic aerosol cloud from the 1783â€“1784 Laki eruption. Journal of Geophysical Research, 2006, 111, .	3.3	112
14	The ozone response to ENSO in Aura satellite measurements and a chemistryâ€climate simulation. Journal of Geophysical Research D: Atmospheres, 2013, 118, 965-976.	1.2	98
15	Impacts of climate change on stratospheric ozone recovery. Geophysical Research Letters, 2009, 36, .	1.5	97
16	The response of tropical tropospheric ozone to ENSO. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	90
17	Modifications of the quasiâ€biennial oscillation by a geoengineering perturbation of the stratospheric aerosol layer. Geophysical Research Letters, 2014, 41, 1738-1744.	1.5	90
18	A new ENSO index derived from satellite measurements of column ozone. Atmospheric Chemistry and Physics, 2010, 10, 3711-3721.	1.9	87

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19	Stratospheric variability contributed to and sustained the recent hiatus in Eurasian winter warming. Geophysical Research Letters, 2017, 44, 374-382.	1.5	82
20	The Response of Ozone and Nitrogen Dioxide to the Eruption of Mt. Pinatubo at Southern and Northern Midlatitudes. Journals of the Atmospheric Sciences, 2013, 70, 894-900.	0.6	81
21	Dispersion of the volcanic sulfate cloud from a Mount Pinatuboâ€"like eruption. Journal of Geophysical Research, 2012, 117, .	3.3	77
22	Effect of zonal asymmetries in stratospheric ozone on simulated Southern Hemisphere climate trends. Geophysical Research Letters, 2009, 36, .	1.5	75
23	On the influence of anthropogenic forcings on changes in the stratospheric mean age. Journal of Geophysical Research, 2009, 114, .	3.3	75
24	The Downward Influence of Sudden Stratospheric Warmings: Association with Tropospheric Precursors. Journal of Climate, 2019, 32, 85-108.	1.2	75
25	Sulfuric acid deposition from stratospheric geoengineering with sulfate aerosols. Journal of Geophysical Research, 2009, 114, .	3.3	74
26	Decline and recovery of total column ozone using a multimodel time series analysis. Journal of Geophysical Research, 2010, 115, .	3.3	74
27	Atmospheric volcanic loading derived from bipolar ice cores: Accounting for the spatial distribution of volcanic deposition. Journal of Geophysical Research, 2007, 112, .	3.3	72
28	Recent Decline in Extratropical Lower Stratospheric Ozone Attributed to Circulation Changes. Geophysical Research Letters, 2018, 45, 5166-5176.	1.5	71
29	Multimodel assessment of the factors driving stratospheric ozone evolution over the 21st century. Journal of Geophysical Research, 2010, 115, .	3.3	66
30	Largeâ€Scale Atmospheric Transport in <scp>GEOS</scp> Replay Simulations. Journal of Advances in Modeling Earth Systems, 2017, 9, 2545-2560.	1.3	64
31	Aircraft observations since the 1990s reveal increases of tropospheric ozone at multiple locations across the Northern Hemisphere. Science Advances, 2020, 6, .	4.7	64
32	Sensitivity of 21st century stratospheric ozone to greenhouse gas scenarios. Geophysical Research Letters, 2010, 37, .	1.5	62
33	Response of the Antarctic Stratosphere to Two Types of El NiÃ±o Events. Journals of the Atmospheric Sciences, 2011, 68, 812-822.	0.6	58
34	Mapping hydroxyl variability throughout the global remote troposphere via synthesis of airborne and satellite formaldehyde observations. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 11171-11180.	3.3	58
35	Is the Brewerâ€Dobson circulation increasing or moving upward?. Geophysical Research Letters, 2016, 43, 1772-1779.	1.5	56
36	Ozone sensitivity to varying greenhouse gases and ozone-depleting substances in CCMI-1 simulations. Atmospheric Chemistry and Physics, 2018, 18, 1091-1114.	1.9	56

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37	Global changes in the diurnal cycle of surface ozone. Atmospheric Environment, 2019, 199, 323-333.	1.9	53
38	Consequences of Regional-Scale Nuclear Conflicts. Science, 2007, 315, 1224-1225.	6.0	51
39	Understanding the Changes of Stratospheric Water Vapor in Coupled Chemistryâ€“Climate Model Simulations. Journals of the Atmospheric Sciences, 2008, 65, 3278-3291.	0.6	51
40	Revisiting the Mystery of Recent Stratospheric Temperature Trends. Geophysical Research Letters, 2018, 45, 9919-9933.	1.5	51
41	Transport of ice into the stratosphere and the humidification of the stratosphere over the 21st century. Geophysical Research Letters, 2016, 43, 2323-2329.	1.5	50
42	Southern Hemisphere atmospheric circulation effects of the 1991 Mount Pinatubo eruption. Geophysical Research Letters, 2007, 34, .	1.5	49
43	Ensemble-based deep learning for estimating PM2.5 over California with multisource big data including wildfire smoke. Environment International, 2020, 145, 106143.	4.8	48
44	Temperature trends in the tropical upper troposphere and lower stratosphere: Connections with sea surface temperatures and implications for water vapor and ozone. Journal of Geophysical Research D: Atmospheres, 2013, 118, 9658-9672.	1.2	47
45	Tropospheric ozone variability in the tropics from ENSO to MJO and shorter timescales. Atmospheric Chemistry and Physics, 2015, 15, 8037-8049.	1.9	47
46	Chemical Mechanisms and Their Applications in the Goddard Earth Observing System (GEOS) Earth System Model. Journal of Advances in Modeling Earth Systems, 2017, 9, 3019-3044.	1.3	47
47	Success of Montreal Protocol Demonstrated by Comparing High-Quality UV Measurements with â€œWorld Avoidedâ€•Calculations from Two Chemistry-Climate Models. Scientific Reports, 2019, 9, 12332.	1.6	44
48	No robust evidence of future changes in major stratospheric sudden warmings: a multi-model assessment from CCMI. Atmospheric Chemistry and Physics, 2018, 18, 11277-11287.	1.9	41
49	Mechanisms and feedback causing changes in upper stratospheric ozone in the 21st century. Journal of Geophysical Research, 2010, 115, .	3.3	40
50	Modulation of Antarctic vortex composition by the quasiâ€biennial oscillation. Geophysical Research Letters, 2015, 42, 4216-4223.	1.5	38
51	Tropospheric jet response to Antarctic ozone depletion: An update with Chemistry-Climate Model Initiative (CCMI) models. Environmental Research Letters, 2018, 13, 054024.	2.2	38
52	The Montreal Protocol protects the terrestrial carbon sink. Nature, 2021, 596, 384-388.	13.7	38
53	Middle atmosphere response to different descriptions of the 11-yr solar cycle in spectral irradiance in a chemistry-climate model. Atmospheric Chemistry and Physics, 2012, 12, 5937-5948.	1.9	37
54	Nonlinear response of tropical lower-stratospheric temperature and water vapor to ENSO. Atmospheric Chemistry and Physics, 2018, 18, 4597-4615.	1.9	36

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55	Stratospheric Injection of Brominated Very Shortâ€Lived Substances: Aircraft Observations in the Western Pacific and Representation in Global Models. Journal of Geophysical Research D: Atmospheres, 2018, 123, 5690-5719.	1.2	36
56	Response of the Antarctic stratosphere to warm pool El NiÃ±o Events in the GEOS CCM. Atmospheric Chemistry and Physics, 2011, 11, 9659-9669.	1.9	35
57	Contrasting Effects of Central Pacific and Eastern Pacific El NiÃ±o on stratospheric water vapor. Geophysical Research Letters, 2013, 40, 4115-4120.	1.5	33
58	Climatic impact of the longâ€lasting 1783 Laki eruption: Inapplicability of massâ€independent sulfur isotopic composition measurements. Journal of Geophysical Research, 2012, 117, .	3.3	32
59	Formaldehyde in the Tropical Western Pacific: Chemical Sources and Sinks, Convective Transport, and Representation in CAMâ€Chem and the CCMI Models. Journal of Geophysical Research D: Atmospheres, 2017, 122, 11201-11226.	1.2	32
60	Large-scale tropospheric transport in the Chemistryâ€“Climate Model Initiative (CCMI) simulations. Atmospheric Chemistry and Physics, 2018, 18, 7217-7235.	1.9	32
61	Quantifying the effect of mixing on the mean age of air in CCMVal-2 and CCMI-1 models. Atmospheric Chemistry and Physics, 2018, 18, 6699-6720.	1.9	32
62	Interpreting space-based trends in carbon monoxide with multiple models. Atmospheric Chemistry and Physics, 2016, 16, 7285-7294.	1.9	31
63	Changes in Global Tropospheric OH Expected as a Result of Climate Change Over the Last Several Decades. Journal of Geophysical Research D: Atmospheres, 2018, 123, 10,774.	1.2	31
64	The long-term transport and radiative impacts of the 2017 British Columbia pyrocumulonimbus smoke aerosols in the stratosphere. Atmospheric Chemistry and Physics, 2021, 21, 12069-12090.	1.9	31
65	Improvements in total column ozone in GEOSCCM and comparisons with a new ozoneâ€depleting substances scenario. Journal of Geophysical Research D: Atmospheres, 2014, 119, 5613-5624.	1.2	30
66	Seasonal variation of ozone in the tropical lower stratosphere: Southern tropics are different from northern tropics. Journal of Geophysical Research D: Atmospheres, 2014, 119, 6196-6206.	1.2	30
67	Effect of recent sea surface temperature trends on the Arctic stratospheric vortex. Journal of Geophysical Research D: Atmospheres, 2015, 120, 5404-5416.	1.2	30
68	Time-varying changes in the simulated structure of the Brewerâ€“Dobson Circulation. Atmospheric Chemistry and Physics, 2017, 17, 1313-1327.	1.9	30
69	The salience of nonlinearities in the boreal winter response to ENSO: Arctic stratosphere and Europe. Climate Dynamics, 2019, 53, 4591-4610.	1.7	30
70	The influence of mixing on the stratospheric age of air changes in the 21st century. Atmospheric Chemistry and Physics, 2019, 19, 921-940.	1.9	29
71	Impact of future nitrous oxide and carbon dioxide emissions on the stratospheric ozone layer. Environmental Research Letters, 2015, 10, 034011.	2.2	28
72	Large Impacts, Past and Future, of Ozoneâ€Depleting Substances on Brewerâ€Dobson Circulation Trends: A Multimodel Assessment. Journal of Geophysical Research D: Atmospheres, 2019, 124, 6669-6680.	1.2	28

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73	Improvement of the GEOS-5 AGCM upon updating the air-sea roughness parameterization. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	27
74	Tropospheric ozone in CCMI models and Gaussian process emulation to understand biases in the SOCOLv3 chemistryâ€“climate model. Atmospheric Chemistry and Physics, 2018, 18, 16155-16172.	1.9	27
75	The salience of nonlinearities in the boreal winter response to ENSO: North Pacific and North America. Climate Dynamics, 2019, 52, 4429-4446.	1.7	27
76	Assessment of the breakup of the Antarctic polar vortex in two new chemistryâ€climate models. Journal of Geophysical Research, 2010, 115, .	3.3	25
77	Mechanisms Linked to Recent Ozone Decreases in the Northern Hemisphere Lower Stratosphere. Journal of Geophysical Research D: Atmospheres, 2020, 125, e2019JD031631.	1.2	25
78	Future trends in stratosphere-to-troposphere transport in CCMI models. Atmospheric Chemistry and Physics, 2020, 20, 6883-6901.	1.9	25
79	Disentangling the Drivers of the Summertime Ozoneâ€Temperature Relationship Over the United States. Journal of Geophysical Research D: Atmospheres, 2019, 124, 10503-10524.	1.2	24
80	A machine learning examination of hydroxyl radical differences among model simulations for CCMI-1. Atmospheric Chemistry and Physics, 2020, 20, 1341-1361.	1.9	24
81	The relative importance of random error and observation frequency in detecting trends in upper tropospheric water vapor. Journal of Geophysical Research, 2011, 116, .	3.3	23
82	The effect of representing bromine from VSLS on the simulation and evolution of Antarctic ozone. Geophysical Research Letters, 2016, 43, 9869-9876.	1.5	23
83	Clear-sky ultraviolet radiation modelling using output from the Chemistry Climate Model Initiative. Atmospheric Chemistry and Physics, 2019, 19, 10087-10110.	1.9	22
84	A 4 U laser heterodyne radiometer for methane (CH₄) and carbon dioxide (CO₂) measurements from an occultation-viewing CubeSat. Measurement Science and Technology, 2017, 28, 035902.	1.4	21
85	Evaluation of NASA's high-resolution global composition simulations: Understanding a pollution event in the Chesapeake Bay during the summer 2017 OWLETS campaign. Atmospheric Environment, 2020, 222, 117133.	1.9	20
86	Effect of Gravity Waves From Small Islands in the Southern Ocean on the Southern Hemisphere Atmospheric Circulation. Journal of Geophysical Research D: Atmospheres, 2018, 123, 1552-1561.	1.2	19
87	Understanding differences in upper stratospheric ozone response to changes in chlorine and temperature as computed using CCMValâ€2 models. Journal of Geophysical Research, 2012, 117, .	3.3	18
88	Understanding differences in chemistry climate model projections of stratospheric ozone. Journal of Geophysical Research D: Atmospheres, 2014, 119, 4922-4939.	1.2	18
89	Airmass Origin in the Arctic. Part I: Seasonality. Journal of Climate, 2015, 28, 4997-5014.	1.2	18
90	The Impact of Boreal Summer ENSO Events on Tropical Lower Stratospheric Ozone. Journal of Geophysical Research D: Atmospheres, 2018, 123, 9843-9857.	1.2	16

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91	The Effects of a 1998 Observing System Change on MERRAâ€2â€Based Ozone Profile Simulations. Journal of Geophysical Research D: Atmospheres, 2019, 124, 7429.	1.2	14
92	A cloud-ozone data product from Aura OMI and MLS satellite measurements. Atmospheric Measurement Techniques, 2017, 10, 4067-4078.	1.2	13
93	Observed Hemispheric Asymmetry in Stratospheric Transport Trends From 1994 to 2018. Geophysical Research Letters, 2020, 47, e2020GL088567.	1.5	13
94	Sensitivity of the atmospheric response to warm pool El NiÃ±o events to modeled SSTs and future climate forcings. Journal of Geophysical Research D: Atmospheres, 2013, 118, 13,371.	1.2	12
95	Air-mass Origin in the Arctic. Part II: Response to Increases in Greenhouse Gases. Journal of Climate, 2015, 28, 9105-9120.	1.2	11
96	Model-based climatology of diurnal variability in stratospheric ozone as a data analysis tool. Atmospheric Measurement Techniques, 2020, 13, 2733-2749.	1.2	11
97	Connections between the Spring Breakup of the Southern Hemisphere Polar Vortex, Stationary Waves, and Airâ€"Sea Roughness. Journals of the Atmospheric Sciences, 2013, 70, 2137-2151.	0.6	10
98	The impact of greenhouse gases on past changes in tropospheric ozone. Journal of Geophysical Research, 2012, 117, .	3.3	9
99	Multi-decadal records of stratospheric composition and their relationship to stratospheric circulation change. Atmospheric Chemistry and Physics, 2017, 17, 12081-12096.	1.9	9
100	Woodbury Formation (Campanian) in New Jersey yields largest known Cretaceous otolith assemblage of teleostean fishes in North America. Proceedings of the Academy of Natural Sciences of Philadelphia, 2016, 165, 15-36.	1.3	8
101	Seasonal ventilation of the stratosphere: Robust diagnostics from oneâ€way flux distributions. Journal of Geophysical Research D: Atmospheres, 2014, 119, 293-306.	1.2	7
102	Stratospheric impact on the Northern Hemisphere winter and spring ozone interannual variability in the troposphere. Atmospheric Chemistry and Physics, 2020, 20, 6417-6433.	1.9	7
103	Net influence of an internally generated quasi-biennial oscillation on modelled stratospheric climate and chemistry. Atmospheric Chemistry and Physics, 2013, 13, 12187-12197.	1.9	6
104	Attribution of Chemistry-Climate Model Initiative (CCMI) ozone radiative flux bias from satellites. Atmospheric Chemistry and Physics, 2020, 20, 281-301.	1.9	6
105	Ultraviolet Radiation modelling using output from the Chemistry Climate Model Initiative. , 2019, 19, 10087-10110.		5
106	Evaluation of Version 3 Total and Tropospheric Ozone Columns From Earth Polychromatic Imaging Camera on Deep Space Climate Observatory for Studying Regional Scale Ozone Variations. Frontiers in Remote Sensing, 2021, 2, .	1.3	5
107	A global ozone profile climatology for satellite retrieval algorithms based on Aura MLS measurements and the MERRA-2 GMI simulation. Atmospheric Measurement Techniques, 2021, 14, 6407-6418.	1.2	5
108	Volcanic Climate Warming Through Radiative and Dynamical Feedbacks of SO₂ Emissions. Geophysical Research Letters, 2022, 49, .	1.5	5

#	ARTICLE	IF	CITATIONS
109	Correction to â€œSulfuric acid deposition from stratospheric geoengineering with sulfate aerosolsâ€. Journal of Geophysical Research, 2010, 115, .	3.3	4
110	Comparison of chemical lateral boundary conditions for air quality predictions over the contiguous United States during pollutant intrusion events. Atmospheric Chemistry and Physics, 2021, 21, 2527-2550.	1.9	4
111	A Model and Satelliteâ€Based Analysis of the Tropospheric Ozone Distribution in Clear Versus Convectively Cloudy Conditions. Journal of Geophysical Research D: Atmospheres, 2017, 122, 11,948.	1.2	3
112	Hemispheric differences in the annual cycle of tropical lower stratosphere transport and tracers. Journal of Geophysical Research D: Atmospheres, 2017, 122, 7183-7199.	1.2	3
113	Seasonality of the MJO Impact on Upper Troposphereâ€“Lower Stratosphere Temperature, Circulation, and Composition. Journals of the Atmospheric Sciences, 2020, 77, 1455-1473.	0.6	3
114	Planetary Defense Mitigation Gateway: A One-Stop Gateway for Pertinent PD-Related Contents. Data, 2019, 4, 47.	1.2	1
115	Reply to comment by Coleâ€Dai et al. on â€œClimatic impact of the longâ€lasting Laki eruption: Inapplicability of massâ€independent sulfur isotope composition measurementsâ€. Journal of Geophysical Research D: Atmospheres, 2014, 119, 6636-6637.	1.2	0
116	Investigations of short warning time response options for hazardous near-Earth objects. , 2015, , .		0
117	Stratospheric Impacts of Continuing CFCâ€11 Emissions Simulated in a Chemistryâ€Climate Model. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD033656.	1.2	0
118	Response of the Upperâ€Level Monsoon Anticyclones and Ozone to Abrupt CO₂ Changes. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2021JD034903.	1.2	0