Martin G Schultz

List of Publications by Year
in descending order

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124 papers	23,737 citations	28242 55 h-index	19726 117 g-index
173 all docs	173 docs citations	173 times ranked	16941 citing authors

#	Article	IF	Citations
1	Global, high-resolution mapping of tropospheric ozone â€“ explainable machine learning and impact of uncertainties. Geoscientific Model Development, 2022, 15, 4331-4354.	1.3	12
2	Exploring decomposition of temporal patterns to facilitate learning of neural networks for ground-level daily maximum 8-hour average ozone prediction. , 2022, 1, .		3
3	IntelliO3-ts v1.0: a neural network approach to predict near-surface ozone concentrations in Germany. Geoscientific Model Development, 2021, 14, 1-25.	1.3	23
4	Can deep learning beat numerical weather prediction?. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200097.	1.6	142
5	MLAir (v1.0) â€“ a tool to enable fast and flexible machine learning on air data time series. Geoscientific Model Development, 2021, 14, 1553-1574.	1.3	5
6	Mapping Yearly Fine Resolution Global Surface Ozone through the Bayesian Maximum Entropy Data Fusion of Observations and Model Output for 1990â€“2017. Environmental Science & Technology, 2021, 55, 4389-4398.	4.6	47
7	AQ-Bench: a benchmark dataset for machine learning on global air quality metrics. Earth System Science Data, 2021, 13, 3013-3033.	3.7	12
8	Context aware benchmarking and tuning of a TByte-scale air quality database and web service. Earth Science Informatics, 2021, 14, 1597-1607.	1.6	5
9	Trend detection of atmospheric time series. Elementa, 2021, 9, .	1.1	10
10	Impact of U.S. Oil and Natural Gas Emission Increases on Surface Ozone Is Most Pronounced in the Central United States. Environmental Science & Technology, 2020, 54, 12423-12433.	4.6	21
11	An intercomparison of tropospheric ozone reanalysis products from CAMS, CAMS interim, TCR-1, and TCR-2. Geoscientific Model Development, 2020, 13, 1513-1544.	1.3	24
12	Multi-decadal surface ozone trends at globally distributed remote locations. Elementa, 2020, 8, .	1.1	54
13	Open weather and climate science in the digital era. Geoscience Communication, 2020, 3, 191-201.	0.5	7
14	ESD Reviews: Climate feedbacks in the Earth system and prospects for their evaluation. Earth System Dynamics, 2019, 10, 379-452.	2.7	46
15	The community atmospheric chemistry box model CAABA/MECCA-4.0. Geoscientific Model Development, 2019, 12, 1365-1385.	1.3	54
16	The global aerosolâ€“climate model ECHAM6.3â€“HAM2.3 â€“ Part 1: Aerosol evaluation. Geoscientific Model Development, 2019, 12, 1643-1677.	1.3	103
17	A new method (M³Fusion v1) for combining observations and multiple model output for an improved estimate of the global surface ozone distribution. Geoscientific Model Development, 2019, 12, 955-978.	1.3	23
18	Tropospheric Ozone Assessment Report: Tropospheric ozone from 1877 to 2016, observed levels, trends and uncertainties. Elementa, 2019, 7, .	1.1	103

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19	A New Tool for Automated Quality Control of Environmental Time Series (AutoQC4Env) in Open Web Services. Lecture Notes in Business Information Processing, 2019, , 513-518.	0.8	0
20	Ozone impacts of gasâ€“aerosol uptake in global chemistry transport models. Atmospheric Chemistry and Physics, 2018, 18, 3147-3171.	1.9	36
21	The chemistryâ€“climate model ECHAM6.3-HAM2.3-MOZ1.0. Geoscientific Model Development, 2018, 11, 1695-1723.	1.3	51
22	A Web Service Architecture for Objective Station Classification Purposes. , 2018, , .		1
23	Peroxy acetyl nitrate (PAN) measurements at northern midlatitude mountain sites in April: a constraint on continental sourceâ€“receptor relationships. Atmospheric Chemistry and Physics, 2018, 18, 15345-15361.	1.9	3
24	SALSA2.0: The sectional aerosol module of the aerosolâ€“chemistryâ€“climate model ECHAM6.3.0-HAM2.3-MOZ1.0. Geoscientific Model Development, 2018, 11, 3833-3863.	1.3	52
25	Isoprene-derived secondary organic aerosol in the global aerosolâ€“chemistryâ€“climate model ECHAM6.3.0â€“HAM2.3â€“MOZ1.0. Geoscientific Model Development, 2018, 11, 3235-3260.	1.3	30
26	Severe Surface Ozone Pollution in China: A Global Perspective. Environmental Science and Technology Letters, 2018, 5, 487-494.	3.9	570
27	Tropospheric Ozone Assessment Report: Assessment of global-scale model performance for global and regional ozone distributions, variability, and trends. Elementa, 2018, 6, .	1.1	177
28	Tropospheric Ozone Assessment Report: Present-day ozone distribution and trends relevant to human health. Elementa, 2018, 6, .	1.1	167
29	Tropospheric ozone assessment report: Global ozone metrics for climate change, human health, and crop/ecosystem research. Elementa, 2018, 6, 1.	1.1	196
30	Tropospheric Ozone Assessment Report: Present-day tropospheric ozone distribution and trends relevant to vegetation. Elementa, 2018, 6, .	1.1	212
31	In situ temperature measurements in the upper troposphere and lowermost stratosphere from 2Âdecades of IAGOS long-term routine observation. Atmospheric Chemistry and Physics, 2017, 17, 12495-12508.	1.9	12
32	Implementation of the MEGAN (v2.1) biogenic emission model in the ECHAM6-HAMMOZ chemistry climate model. Geoscientific Model Development, 2017, 10, 903-926.	1.3	40
33	Tropospheric Ozone Assessment Report: Database and metrics data of global surface ozone observations. Elementa, 2017, 5, .	1.1	172
34	Regional trend analysis of surface ozone observations from monitoring networks in eastern North America, Europe and East Asia. Elementa, 2017, 5, .	1.1	125
35	Cluster analysis of European surface ozone observations for evaluation of MACC reanalysis data. Atmospheric Chemistry and Physics, 2016, 16, 6863-6881.	1.9	31
36	Climate change reduces warming potential of nitrous oxide by an enhanced Brewerâ€Dobson circulation. Geophysical Research Letters, 2016, 43, 5851-5859.	1.5	5

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37	Transport of tropospheric and stratospheric ozone over India: Balloon-borne observations and modeling analysis. Atmospheric Environment, 2016, 131, 228-242.	1.9	12
38	Data assimilation of satellite-retrieved ozone, carbon monoxide and nitrogen dioxide with ECMWF's Composition-IFS. Atmospheric Chemistry and Physics, 2015, 15, 5275-5303.	1.9	109
39	Copernicus stratospheric ozone service, 2009â€“2012: validation, system intercomparison and roles of input data sets. Atmospheric Chemistry and Physics, 2015, 15, 2269-2293.	1.9	27
40	Transport pathways of peroxyacetyl nitrate in the upper troposphere and lower stratosphere from different monsoon systems during the summer monsoon season. Atmospheric Chemistry and Physics, 2015, 15, 11477-11499.	1.9	24
41	Evaluation of near-surface ozone over Europe from the MACC reanalysis. Geoscientific Model Development, 2015, 8, 2299-2314.	1.3	34
42	Validation of reactive gases and aerosols in the MACC global analysis and forecast system. Geoscientific Model Development, 2015, 8, 3523-3543.	1.3	49
43	Tropospheric chemistry in the Integrated Forecasting System of ECMWF. Geoscientific Model Development, 2015, 8, 975-1003.	1.3	204
44	Ten years of global burned area products from spaceborne remote sensingâ€”A review: Analysis of user needs and recommendations for future developments. International Journal of Applied Earth Observation and Geoinformation, 2014, 26, 64-79.	1.4	185
45	Trends in peroxyacetyl nitrate (PAN) in the upper troposphere and lower stratosphere over southern Asia during the summer monsoon season: regional impacts. Atmospheric Chemistry and Physics, 2014, 14, 12725-12743.	1.9	39
46	On the wintertime low bias of Northern Hemisphere carbon monoxide found in global model simulations. Atmospheric Chemistry and Physics, 2014, 14, 9295-9316.	1.9	101
47	New Directions: GEIA's 2020 vision for better air emissions information. Atmospheric Environment, 2013, 81, 710-712.	1.9	25
48	Impacts of climate change on surface ozone and intercontinental ozone pollution: A multiâ€model study. Journal of Geophysical Research D: Atmospheres, 2013, 118, 3744-3763.	1.2	149
49	Evaluating the impact of chemical boundary conditions on near surface ozone in regional climateâ€“air quality simulations over Europe. Atmospheric Research, 2013, 134, 116-130.	1.8	25
50	Bounding the role of black carbon in the climate system: A scientific assessment. Journal of Geophysical Research D: Atmospheres, 2013, 118, 5380-5552.	1.2	4,319
51	The MACC reanalysis: an 8 yr data set of atmospheric composition. Atmospheric Chemistry and Physics, 2013, 13, 4073-4109.	1.9	424
52	Transport of aerosols into the UTLS and their impact on the Asian monsoon region as seen in a global model simulation. Atmospheric Chemistry and Physics, 2013, 13, 8771-8786.	1.9	85
53	Global reactive gases forecasts and reanalysis in the MACC project. Journal of Integrative Environmental Sciences, 2012, 9, 57-70.	1.0	59
54	Hindcast experiments of tropospheric composition during the summer 2010 fires over western Russia. Atmospheric Chemistry and Physics, 2012, 12, 4341-4364.	1.9	62

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55	Impact of sampling frequency in the analysis of tropospheric ozone observations. Atmospheric Chemistry and Physics, 2012, 12, 6757-6773.	1.9	38
56	Modelling future changes in surface ozone: a parameterized approach. Atmospheric Chemistry and Physics, 2012, 12, 2037-2054.	1.9	155
57	3-D evaluation of tropospheric ozone simulations by an ensemble of regional Chemistry Transport Model. Atmospheric Chemistry and Physics, 2012, 12, 3219-3240.	1.9	44
58	Technical Note: Ozonesonde climatology between 1995 and 2011: description, evaluation and applications. Atmospheric Chemistry and Physics, 2012, 12, 7475-7497.	1.9	101
59	The influence of ozone precursor emissions from four world regions on tropospheric composition and radiative climate forcing. Journal of Geophysical Research, 2012, 117, .	3.3	97
60	Biomass burning emissions estimated with a global fire assimilation system based on observed fire radiative power. Biogeosciences, 2012, 9, 527-554.	1.3	876
61	Surface ozone-temperature relationships in the eastern US: A monthly climatology for evaluating chemistry-climate models. Atmospheric Environment, 2012, 47, 142-153.	1.9	152
62	Forecasts and assimilation experiments of the Antarctic ozone hole 2008. Atmospheric Chemistry and Physics, 2011, 11, 1961-1977.	1.9	33
63	An analysis of long-term regional-scale ozone simulations over the Northeastern United States: variability and trends. Atmospheric Chemistry and Physics, 2011, 11, 567-582.	1.9	66
64	Re-analysis of tropospheric sulfate aerosol and ozone for the period 1980â€“2005 using the aerosol-chemistry-climate model ECHAM5-HAMMOZ. Atmospheric Chemistry and Physics, 2011, 11, 9563-9594.	1.9	63
65	Evolution of anthropogenic and biomass burning emissions of air pollutants at global and regional scales during the 1980â€“2010 period. Climatic Change, 2011, 109, 163-190.	1.7	740
66	Historical (1850â€“2000) gridded anthropogenic and biomass burning emissions of reactive gases and aerosols: methodology and application. Atmospheric Chemistry and Physics, 2010, 10, 7017-7039.	1.9	2,020
67	Global model simulations of air pollution during the 2003 European heat wave. Atmospheric Chemistry and Physics, 2010, 10, 789-815.	1.9	67
68	Sensitivity of tracer transport to model resolution, prescribed meteorology and tracer lifetime in the general circulation model ECHAM5. Atmospheric Chemistry and Physics, 2010, 10, 3385-3396.	1.9	14
69	Current status of the ability of the GEMS/MACC models to reproduce the tropospheric CO vertical distribution as measured by MOZAIC. Geoscientific Model Development, 2010, 3, 501-518.	1.3	56
70	A multi-model analysis of vertical ozone profiles. Atmospheric Chemistry and Physics, 2010, 10, 5759-5783.	1.9	70
71	Observing and Understanding Tropospheric Ozone Changes: Tropospheric Ozone Changes Workshop; Boulder, Colorado, 14â€“16 October 2009. Eos, 2010, 91, 119.	0.1	4
72	What causes the irregular cycle of the atmospheric tape recorder signal in HCN?. Geophysical Research Letters, 2010, 37, .	1.5	22

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73	Global Realâ€time Fire Emission Estimates Based on Spaceâ€borne Fire Radiative Power Observations. , 2009, , .		30
74	Intercontinental Impacts of Ozone Pollution on Human Mortality. Environmental Science & Technology, 2009, 43, 6482-6487.	4.6	126
75	Multimodel estimates of intercontinental sourceâ€receptor relationships for ozone pollution. Journal of Geophysical Research, 2009, 114, .	3.3	430
76	Anthropogenic and natural contributions to regional trends in aerosol optical depth, 1980â€“2006. Journal of Geophysical Research, 2009, 114, .	3.3	200
77	The influence of foreign vs. North American emissions on surface ozone in the US. Atmospheric Chemistry and Physics, 2009, 9, 5027-5042.	1.9	141
78	Coupling global chemistry transport models to ECMWF's integrated forecast system. Geoscientific Model Development, 2009, 2, 253-265.	1.3	145
79	The sensitivity of Western European NO₂ columns to interannual variability of meteorology and emissions: a modelâ€”GOME study. Atmospheric Science Letters, 2008, 9, 182-188.	0.8	8
80	The representation of emissions from megacities in global emission inventories. Atmospheric Environment, 2008, 42, 703-719.	1.9	128
81	Influence of various emission scenarios on ozone in Europe. Ecological Modelling, 2008, 217, 209-218.	1.2	12
82	Global wildland fire emissions from 1960 to 2000. Global Biogeochemical Cycles, 2008, 22, .	1.9	382
83	Trace gas and aerosol interactions in the fully coupled model of aerosolâ€chemistryâ€climate ECHAM5â€HAMMOZ: 1. Model description and insights from the spring 2001 TRACEâ€P experiment. Journal of Geophysical Research, 2008, 113, .	3.3	72
84	Trace gas and aerosol interactions in the fully coupled model of aerosolâ€chemistryâ€climate ECHAM5â€HAMMOZ: 2. Impact of heterogeneous chemistry on the global aerosol distributions. Journal of Geophysical Research, 2008, 113, .	3.3	38
85	A multi-model study of the hemispheric transport and deposition of oxidised nitrogen. Geophysical Research Letters, 2008, 35, .	1.5	76
86	TOWARD A MONITORING AND FORECASTING SYSTEM FOR ATMOSPHERIC COMPOSITION. Bulletin of the American Meteorological Society, 2008, 89, 1147-1164.	1.7	253
87	A multi-model assessment of pollution transport to the Arctic. Atmospheric Chemistry and Physics, 2008, 8, 5353-5372.	1.9	419
88	The influence of African air pollution on regional and global tropospheric ozone. Atmospheric Chemistry and Physics, 2007, 7, 1193-1212.	1.9	78
89	A model investigation of tropospheric ozone chemical tendencies in long-range transported pollution plumes. Journal of Geophysical Research, 2007, 112, .	3.3	36
90	A photochemical modeling study of ozone and formaldehyde generation and budget in the Po basin. Journal of Geophysical Research, 2007, 112, .	3.3	21

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91	Nitrogen and sulfur deposition on regional and global scales: A multimodel evaluation. Global Biogeochemical Cycles, 2006, 20, n/a-n/a.	1.9	846
92	Multimodel ensemble simulations of present-day and near-future tropospheric ozone. Journal of Geophysical Research, 2006, 111, .	3.3	743
93	Multimodel simulations of carbon monoxide: Comparison with observations and projected near-future changes. Journal of Geophysical Research, 2006, 111, .	3.3	254
94	The Global Atmospheric Environment for the Next Generation. Environmental Science & Technology, 2006, 40, 3586-3594.	4.6	338
95	Screening the ESA ATSR-2 World Fire Atlas (1997â€“2002). Atmospheric Chemistry and Physics, 2006, 6, 1409-1424.	1.9	41
96	Multi-model ensemble simulations of tropospheric NO₂ compared with GOME retrievals for the year 2000. Atmospheric Chemistry and Physics, 2006, 6, 2943-2979.	1.9	127
97	Impact of Climate Change on the Future Chemical Composition of the Global Troposphere. Journal of Climate, 2006, 19, 3932-3951.	1.2	81
98	High levels of ozone and related gases over the Bay of Bengal during winter and early spring of 2001. Atmospheric Environment, 2006, 40, 1633-1644.	1.9	42
99	Improved albedo formulation for chemistry transport models based on satellite observations and assimilated snow data and its impact on tropospheric photochemistry. Journal of Geophysical Research, 2005, 110, .	3.3	16
100	Global Wildland Fire Emission Model (GWEM): Evaluating the use of global area burnt satellite data. Journal of Geophysical Research, 2004, 109, .	3.3	256
101	Florida thunderstorms: A faucet of reactive nitrogen to the upper troposphere. Journal of Geophysical Research, 2004, 109, .	3.3	81
102	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.	3.3	848
103	Tropospheric distribution of ozone and its precursors over the tropical Indian Ocean. Journal of Geophysical Research, 2003, 108, .	3.3	15
104	Air Pollution and Climate-Forcing Impacts of a Global Hydrogen Economy. Science, 2003, 302, 624-627.	6.0	341
105	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.	1.9	128
106	On the use of ATSR fire count data to estimate the seasonal and interannual variability of vegetation fire emissions. Atmospheric Chemistry and Physics, 2002, 2, 387-395.	1.9	96
107	Global Air Pollution Crossroads over the Mediterranean. Science, 2002, 298, 794-799.	6.0	920
108	Modeling chemical constituents of the atmosphere. Computing in Science and Engineering, 2002, 4, 56-63.	1.2	31

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109	Methyl iodide: Atmospheric budget and use as a tracer of marine convection in global models. Journal of Geophysical Research, 2002, 107, ACH 8-1-ACH 8-12.	3.3	152
110	Global modeling of tropospheric chemistry with assimilated meteorology: Model description and evaluation. Journal of Geophysical Research, 2001, 106, 23073-23095.	3.3	1,927
111	Measurements of trace gases and photolysis frequencies during SLOPE96 and a coarse estimate of the local OH concentration from HNO3formation. Journal of Geophysical Research, 2000, 105, 1563-1583.	3.3	29
112	Chemical NOxbudget in the upper troposphere over the tropical South Pacific. Journal of Geophysical Research, 2000, 105, 6669-6679.	3.3	22
113	Convective injection and photochemical decay of peroxides in the tropical upper troposphere: Methyl iodide as a tracer of marine convection. Journal of Geophysical Research, 1999, 104, 5717-5724.	3.3	110
114	On the origin of tropospheric ozone and NOxover the tropical South Pacific. Journal of Geophysical Research, 1999, 104, 5829-5843.	3.3	140
115	Chemical characteristics of air from differing source regions during the Pacific Exploratory Mission-Tropics A (PEM-Tropics A). Journal of Geophysical Research, 1999, 104, 16181-16196.	3.3	27
116	Photochemical box modeling of long-range transport from North America to Tenerife during the North Atlantic Regional Experiment (NARE) 1993. Journal of Geophysical Research, 1998, 103, 13477-13488.	3.3	26
117	Trace gas measurements during the Oxidizing Capacity of the Tropospheric Atmosphere campaign 1993 at IzaÃ±a. Journal of Geophysical Research, 1998, 103, 13505-13518.	3.3	36
118	Intercomparison of NO, NO2, NOy, O3, and ROxmeasurements during the Oxidizing Capacity of the Tropospheric Atmosphere (OCTA) campaign 1993 at IzaÃ±a. Journal of Geophysical Research, 1998, 103, 13615-13634.	3.3	23
119	Airborne measurements of the photolysis frequency of NO2. Journal of Geophysical Research, 1996, 101, 18613-18627.	3.3	95
120	Calibration source for peroxy radicals with built-in actinometry using H2O and O2photolysis at 185 nm. Journal of Geophysical Research, 1995, 100, 18811.	3.3	96
121	Climatic impact of surface transport. Issues in Environmental Science and Technology, 0, , 111-128.	0.4	4
122	The Global Atmosphere Watch reactive gases measurement network. Elementa, 0, 3, .	1.1	63
123	The Chemistry Climate Model ECHAM6.3-HAM2.3-MOZ1.0. Geoscientific Model Development Discussions (GMDD), 0, , 1-43.	0.0	2
124	How to develop new digital knowledge transfer products for communicating strategies and new ways towards a carbon-neutral Germany. Advances in Science and Research, 0, 19, 51-71.	1.0	1