Volker Grewe

List of Publications by Year
in descending order

130 papers	6,330 citations	38 h-index	71 g-index
193 all docs	193 docs citations	193 times ranked	4522 citing authors

87888

85541

#	Article	IF	Citations
1	Atmospheric composition change â€“ global and regional air quality. Atmospheric Environment, 2009, 43, 5268-5350.	4.1	714
2	Transport impacts on atmosphere and climate: Aviation. Atmospheric Environment, 2010, 44, 4678-4734.	4.1	565
3	Assessment of temperature, trace species, and ozone in chemistry-climate model simulations of the recent past. Journal of Geophysical Research, 2006, 111, .	3.3	414
4	Aviation radiative forcing in 2000: An update on IPCC (1999). Meteorologische Zeitschrift, 2005, 14, 555-561.	1.0	251
5	Earth System Chemistry integrated Modelling (ESCiMo) with the Modular Earth Submodel System (MESSy) versionÂ2.51. Geoscientific Model Development, 2016, 9, 1153-1200.	3.6	208
6	A comparison of model-simulated trends in stratospheric temperatures. Quarterly Journal of the Royal Meteorological Society, 2003, 129, 1565-1588.	2.7	189
7	Origin and variability of upper tropospheric nitrogen oxides and ozone at northern mid-latitudes. Atmospheric Environment, 2001, 35, 3421-3433.	4.1	145
8	The impact of traffic emissions on atmospheric ozone and OH: results from QUANTIFY. Atmospheric Chemistry and Physics, 2009, 9, 3113-3136.	4.9	143
9	Radiative forcing since preindustrial times due to ozone change in the troposphere and the lower stratosphere. Atmospheric Chemistry and Physics, 2006, 6, 575-599.	4.9	140
10	The impact of greenhouse gases and halogenated species on future solar UV radiation doses. Geophysical Research Letters, 2000, 27, 1127-1130.	4.0	119
11	Simulation of stratospheric water vapor trends: impact on stratospheric ozone chemistry. Atmospheric Chemistry and Physics, 2005, 5, 1257-1272.	4.9	117
12	Evaluating the climate impact of aviation emission scenarios towards the Paris agreement including COVID-19 effects. Nature Communications, 2021, 12, 3841.	12.8	116
13	Long-term changes and variability in a transient simulation with a chemistry-climate model employing realistic forcing. Atmospheric Chemistry and Physics, 2005, 5, 2121-2145.	4.9	109
14	Development of a chemistry module for GCMs: first results of a multiannual integration. Annales Geophysicae, 1998, 16, 205-228.	1.6	99
15	AirClim: an efficient tool for climate evaluation of aircraft technology. Atmospheric Chemistry and Physics, 2008, 8, 4621-4639.	4.9	99
16	Radiative forcing due to changes in ozone and methane caused by the transport sector. Atmospheric Environment, 2011, 45, 387-394.	4.1	87
17	Drivers of the tropospheric ozone budget throughout the 21st century under the medium-high climate scenario RCP 6.0. Atmospheric Chemistry and Physics, 2015, 15, 5887-5902.	4.9	80
18	Lagrangian transport of water vapor and cloud water in the ECHAM4 GCM and its impact on the cold bias. Climate Dynamics, 2008, 31, 491-506.	3.8	78

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19	Results of an interactively coupled atmospheric chemistry â€“ general circulation model: Comparison with observations. Annales Geophysicae, 2001, 19, 435-457.	1.6	76
20	Impact of climate variability on tropospheric ozone. Science of the Total Environment, 2007, 374, 167-181.	8.0	75
21	Attributing ozone to NOx emissions: Implications for climate mitigation measures. Atmospheric Environment, 2012, 59, 102-107.	4.1	74
22	Chemistry-climate interactions in the Goddard Institute for Space Studies general circulation model: 1. Tropospheric chemistry model description and evaluation. Journal of Geophysical Research, 2001, 106, 8047-8075.	3.3	65
23	On the attribution of contributions of atmospheric trace gases to emissions in atmospheric model applications. Geoscientific Model Development, 2010, 3, 487-499.	3.6	65
24	Quantifying the contributions of individual NOx sources to the trend in ozone radiative forcing. Atmospheric Environment, 2011, 45, 2860-2868.	4.1	63
25	The origin of ozone. Atmospheric Chemistry and Physics, 2006, 6, 1495-1511.	4.9	62
26	An evaluation of the performance of chemistry transport models by comparison with research aircraft observations. Part 1: Concepts and overall model performance. Atmospheric Chemistry and Physics, 2003, 3, 1609-1631.	4.9	61
27	Implications of Lagrangian transport for simulations with a coupled chemistry-climate model. Atmospheric Chemistry and Physics, 2009, 9, 5489-5504.	4.9	61
28	Impact of aircraft NOx emissions on tropospheric and stratospheric ozone. part II. Atmospheric Environment, 1998, 32, 3185-3199.	4.1	59
29	Interaction of atmospheric chemistry and climate and its impact on stratospheric ozone. Climate Dynamics, 2002, 18, 501-517.	3.8	59
30	Mitigating the Climate Impact from Aviation: Achievements and Results of the DLR WeCare Project. Aerospace, 2017, 4, 34.	2.2	59
31	Aircraft routing with minimal climate impact: the REACT4C climate cost function modelling approach (V1.0). Geoscientific Model Development, 2014, 7, 175-201.	3.6	51
32	Calculating the global mass exchange between stratosphere and troposphere. Annales Geophysicae, 1996, 14, 431-442.	1.6	49
33	An evaluation of the performance of chemistry transport models - Part 2: Detailed comparison with two selected campaigns. Atmospheric Chemistry and Physics, 2005, 5, 107-129.	4.9	49
34	Interannual variation patterns of total ozone and lower stratospheric temperature in observations and model simulations. Atmospheric Chemistry and Physics, 2006, 6, 349-374.	4.9	48
35	A quasi chemistry-transport model mode for EMAC. Geoscientific Model Development, 2011, 4, 195-206.	3.6	47
36	Can we reliably assess climate mitigation options for air traffic scenarios despite large uncertainties in atmospheric processes?. Transportation Research, Part D: Transport and Environment, 2016, 46, 40-55.	6.8	47

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37	Assessment of the future development of the ozone layer. Geophysical Research Letters, 1998, 25, 3579-3582.	4.0	46
38	Impact of aircraft NOx emissions. Part 1: Interactively coupled climate-chemistry simulations and sensitivities to climate-chemistry feedback, lightning and model resolution. Meteorologische Zeitschrift, 2002, 11, 177-186.	1.0	45
39	Global impact of road traffic emissions on tropospheric ozone. Atmospheric Chemistry and Physics, 2007, 7, 1707-1718.	4.9	42
40	Aviationâ€induced radiative forcing and surface temperature change in dependency of the emission altitude. Journal of Geophysical Research, 2012, 117, .	3.3	42
41	Technical Note: A diagnostic for ozone contributions of various NO_x emissions in multi-decadal chemistry-climate model simulations. Atmospheric Chemistry and Physics, 2004, 4, 729-736.	4.9	41
42	Climate impact of supersonic air traffic: an approach to optimize a potential future supersonic fleet â€“ results from the EU-project SCENIC. Atmospheric Chemistry and Physics, 2007, 7, 5129-5145.	4.9	40
43	Reduction of the air traffic's contribution to climate change: A REACT4C case study. Atmospheric Environment, 2014, 94, 616-625.	4.1	40
44	Feasibility of climate-optimized air traffic routing for trans-Atlantic flights. Environmental Research Letters, 2017, 12, 034003.	5.2	39
45	Solar cycle effect delays onset of ozone recovery. Geophysical Research Letters, 2006, 33, .	4.0	36
46	The simulation of the Antarctic ozone hole by chemistry-climate models. Atmospheric Chemistry and Physics, 2009, 9, 6363-6376.	4.9	36
47	Impact of aircraft NOx emissions. Part 2: Effects of lowering the flight altitude. Meteorologische Zeitschrift, 2002, 11, 197-205.	1.0	36
48	Comparison of recent modeled and observed trends in total column ozone. Journal of Geophysical Research, 2006, 111, .	3.3	31
49	Future impact of non-land based traffic emissions on atmospheric ozone and OH â€“ an optimistic scenario and a possible mitigation strategy. Atmospheric Chemistry and Physics, 2011, 11, 11293-11317.	4.9	30
50	A Concept for Multi-Criteria Environmental Assessment of Aircraft Trajectories. Aerospace, 2017, 4, 42.	2.2	30
51	A generalized tagging method. Geoscientific Model Development, 2013, 6, 247-253.	3.6	29
52	Potential to reduce the climate impact of aviation by climate restricted airspaces. Transport Policy, 2019, 83, 102-110.	6.6	29
53	How ambiguous are climate metrics? And are we prepared to assess and compare the climate impact of new air traffic technologies?. Atmospheric Environment, 2015, 106, 373-374.	4.1	28
54	Impact on flight trajectory characteristics when avoiding the formation of persistent contrails for transatlantic flights. Transportation Research, Part D: Transport and Environment, 2018, 65, 466-484.	6.8	28

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55	Climate-Optimized Trajectories and Robust Mitigation Potential: Flying ATM4E. Aerospace, 2020, 7, 156.	2.2	28
56	Impact of future subsonic aircraft NOxemissions on the atmospheric composition. Geophysical Research Letters, 1999, 26, 47-50.	4.0	27
57	Estimate of the climate impact of cryoplanes. Aerospace Science and Technology, 2001, 5, 73-84.	4.8	27
58	Contribution of emissions to concentrations: the TAGGING 1.0 submodel based on the Modular Earth Submodel System (MESSy 2.52). Geoscientific Model Development, 2017, 10, 2615-2633.	3.6	26
59	Revisiting the contribution of land transport and shipping emissions to tropospheric ozone. Atmospheric Chemistry and Physics, 2018, 18, 5567-5588.	4.9	26
60	Attribution of ozone changes to dynamical and chemical processes in CCMs and CTMs. Geoscientific Model Development, 2011, 4, 271-286.	3.6	25
61	The contribution of aviation NO_x emissions to climate change: are we ignoring methodological flaws?. Environmental Research Letters, 2019, 14, 121003.	5.2	25
62	Climate-Compatible Air Transport Systemâ€”Climate Impact Mitigation Potential for Actual and Future Aircraft. Aerospace, 2016, 3, 38.	2.2	24
63	Assessing the climate impact of the AHEAD multi-fuel blended wing body. Meteorologische Zeitschrift, 2017, 26, 711-725.	1.0	24
64	The Implications of Intermediate Stop Operations on Aviation Emissions and Climate. Meteorologische Zeitschrift, 2017, 26, 697-709.	1.0	24
65	Algorithmic climate change functions for the use in eco-efficient flight planning. Transportation Research, Part D: Transport and Environment, 2019, 67, 388-405.	6.8	23
66	Separating the influence of halogen and climate changes on ozone recovery in the upper stratosphere. Journal of Geophysical Research, 2002, 107, ACL 3-1.	3.3	21
67	Model intercomparison of the transport of aircraft-like emissions from sub- and supersonic aircraft. Meteorologische Zeitschrift, 2002, 11, 151-159.	1.0	20
68	Sensitivity studies of oxidative changes in the troposphere in 2100 using the GISS GCM. Atmospheric Chemistry and Physics, 2003, 3, 1267-1283.	4.9	20
69	Estimates of the climate impact of future small-scale supersonic transport aircraft â€“ results from the HISAC EU-project. Aeronautical Journal, 2010, 114, 199-206.	1.6	20
70	Dynamics and composition of the Asian summer monsoon anticyclone. Atmospheric Chemistry and Physics, 2018, 18, 5655-5675.	4.9	20
71	Investigating lower stratospheric model transport: Lagrangian calculations of mean age and age spectra in the GCM ECHAM4. Climate Dynamics, 2008, 30, 225-238.	3.8	19
72	A Comprehensive Survey on Climate Optimal Aircraft Trajectory Planning. Aerospace, 2022, 9, 146.	2.2	19

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73	Mitigation of Non-CO2 Aviationâ€™s Climate Impact by Changing Cruise Altitudes. Aerospace, 2021, 8, 36.	2.2	18
74	Impact of stratospheric dynamics and chemistry on northern hemisphere midlatitude ozone loss. Journal of Geophysical Research, 1998, 103, 25417-25433.	3.3	17
75	Newly developed aircraft routing options for air traffic simulation in the chemistryâ€“climate model EMAC 2.53: AirTraf 2.0. Geoscientific Model Development, 2020, 13, 4869-4890.	3.6	17
76	Attributing ozone and its precursors to land transport emissions in Europe and Germany. Atmospheric Chemistry and Physics, 2020, 20, 7843-7873.	4.9	15
77	COVID-19 induced lower-tropospheric ozone changes. Environmental Research Letters, 2021, 16, 064005.	5.2	15
78	Climate Optimized Air Transport. Research Topics in Aerospace, 2012, , 727-746.	0.7	15
79	The impact of horizontal transport on the chemical composition in the tropopause region: lightning NOx and streamers. Advances in Space Research, 2004, 33, 1058-1061.	2.6	14
80	Influence of weather situation on non-CO₂ aviation climate effects: the REACT4C climate change functions. Atmospheric Chemistry and Physics, 2021, 21, 9151-9172.	4.9	14
81	Heterogeneous PSC ozone loss during an ozone mini-hole. Geophysical Research Letters, 1997, 24, 2503-2506.	4.0	13
82	Lightning and thunderstorms, Part I: Observational data and model results. Meteorologische Zeitschrift, 2002, 11, 379-393.	1.0	13
83	Future impact of traffic emissions on atmospheric ozone and OH based on two scenarios. Atmospheric Chemistry and Physics, 2012, 12, 12211-12225.	4.9	13
84	Future changes of the atmospheric composition and the impact of climate change. Tellus, Series B: Chemical and Physical Meteorology, 2022, 53, 103.	1.6	12
85	Radiative forcing from particle emissions by future supersonic aircraft. Atmospheric Chemistry and Physics, 2008, 8, 4069-4084.	4.9	12
86	The ACCENT-protocol: a framework for benchmarking and model evaluation. Geoscientific Model Development, 2012, 5, 611-618.	3.6	12
87	Quantifying the climate impact of emissions from land-based transport in Germany. Transportation Research, Part D: Transport and Environment, 2018, 65, 825-845.	6.8	12
88	Climate Impact Mitigation Potential of European Air Traffic in a Weather Situation with Strong Contrail Formation. Aerospace, 2021, 8, 50.	2.2	12
89	Dynamic-chemical coupling of the upper troposphere and lower stratosphere region. Chemosphere, 2002, 47, 851-861.	8.2	11
90	Air traffic simulation in chemistry-climate model EMAC 2.41: AirTraf 1.0. Geoscientific Model Development, 2016, 9, 3363-3392.	3.6	11

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91	Climatologies of subtropical mixing derived from 3D models. Atmospheric Chemistry and Physics, 2003, 3, 1007-1021.	4.9	10
92	Do supersonic aircraft avoid contrails?. Atmospheric Chemistry and Physics, 2008, 8, 955-967.	4.9	10
93	Integrated Analysis and Design Environment for a Climate Compatible Air Transport System. , 2009, , .		10
94	Cost-Benefit Assessment of Climate-Restricted Airspaces as an Interim Climate Mitigation Option. Journal of Air Transportation, 2017, 25, 27-38.	1.5	10
95	Future changes of the atmospheric composition and the impact of climate change. Tellus, Series B: Chemical and Physical Meteorology, 2001, 53, 103-121.	1.6	9
96	Comment on "Quantitative performance metrics for stratospheric-resolving chemistry-climate models" by Waugh and Eyring (2008). Atmospheric Chemistry and Physics, 2009, 9, 9101-9110.	4.9	9
97	The impact of weather patterns and related transport processes on aviation's contribution to ozone and methane concentrations from NO_{<i>x</i>} emissions. Atmospheric Chemistry and Physics, 2020, 20, 12347-12361.	4.9	9
98	Drivers of hemispheric differences in return dates of mid-latitude stratospheric ozone to historical levels. Atmospheric Chemistry and Physics, 2013, 13, 7279-7300.	4.9	8
99	Concept of climate-charged airspaces: a potential policy instrument for internalizing aviation's climate impact of non-CO₂ effects. Climate Policy, 2021, 21, 1066-1085.	5.1	8
100	Climate assessment of single flights: Deduction of route specific equivalent CO₂ emissions. International Journal of Sustainable Transportation, 2023, 17, 29-40.	4.1	8
101	Chemical Composition of the Atmosphere. Research Topics in Aerospace, 2012, , 17-35.	0.7	8
102	Impact of dynamically induced ozone mini-hole events on PSC formation and chemical ozone destruction. Advances in Space Research, 2004, 33, 1062-1067.	2.6	7
103	Climate functions for the use in multi-disciplinary optimisation in the pre-design of supersonic business jet. Aeronautical Journal, 2010, 114, 259-269.	1.6	7
104	Cost-Benefit Assessment of 2D and 3D Climate And Weather Optimized Trajectories. , 2016, , .		7
105	Impact of Hybrid-Electric Aircraft on Contrail Coverage. Aerospace, 2020, 7, 147.	2.2	7
106	Assessing the Climate Impact of Formation Flights. Aerospace, 2020, 7, 172.	2.2	7
107	Analysis of Aircraft Routing Strategies for North Atlantic Flights by Using AirTraf 2.0. Aerospace, 2021, 8, 33.	2.2	7
108	Impact of Lightning on Air Chemistry and Climate. , 2009, , 537-549.		7

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109	An advanced method of contributing emissions to short-lived chemical species (OH and) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 50 7 Submodel System (MESSy 2.53). Geoscientific Model Development, 2018, 11, 2049-2066.	3.6	6
110	Are contributions of emissions to ozone a matter of scale? â€“ a study using MECO(n) (MESSy v2.50). Geoscientific Model Development, 2020, 13, 363-383.	3.6	6
111	Climate Impact Mitigation Potential of Formation Flight. Aerospace, 2021, 8, 14.	2.2	6
112	Eco-efficiency in aviation. Meteorologische Zeitschrift, 2017, 26, 689-696.	1.0	6
113	Sulphate particles from subsonic aviation: impact on upper tropospheric and lower stratospheric ozone. Physics and Chemistry of the Earth, Part C: Solar, Terrestrial and Planetary Science, 2001, 26, 563-569.	0.2	5
114	Impact of ozone mini-holes on the heterogeneous destruction of stratospheric ozone. Chemosphere, 2003, 50, 177-190.	8.2	5
115	Optimization without limits â€” The world wide air traffic management project. , 2017, , .		5
116	On the theory of mass conserving transformations for Lagrangian methods in 3DÂatmosphere-chemistry models. Meteorologische Zeitschrift, 2014, 23, 441-447.	1.0	5
117	The influence of future non-mitigated road transport emissions on regional ozone exceedences at global scale. Atmospheric Environment, 2014, 89, 633-641.	4.1	4
118	Thunderstorms: Trace Species Generators. Research Topics in Aerospace, 2012, , 115-133.	0.7	4
119	Case Study for Testing the Validity of NOx-Ozone Algorithmic Climate Change Functions for Optimising Flight Trajectories. Aerospace, 2022, 9, 231.	2.2	4
120	Hemispheric ozone variability indices derived from satellite observations and comparison to a coupled chemistry-climate model. Atmospheric Chemistry and Physics, 2006, 6, 5105-5120.	4.9	2
121	Correction to â€œSolar cycle effect delays onset of ozone recoveryâ€. Geophysical Research Letters, 2006, 33, .	4.0	1
122	Climate Impact Evaluation as Part of Aircraft Pre-Design. , 2009, , .		1
123	A new method to diagnose the contribution of anthropogenic activities to temperature: temperature tagging. Geoscientific Model Development, 2013, 6, 417-427.	3.6	1
124	Evaluating Climate-Chemistry Response and Mitigation Options with AirClim. Research Topics in Aerospace, 2012, , 591-606.	0.7	1
125	Deep convective transport in a two-dimensional model: Effects on lower stratospheric aerosols and ozone. Meteorologische Zeitschrift, 2002, 11, 187-196.	1.0	1
126	Aviation emissions and climate impacts. , 2020, , 4-15.		1

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127	Klimafaktor Luftfahrt. Physik in Unserer Zeit, 1999, 30, 102-107.	0.0	0
128	Corrigendum to "Climatologies of subtropical mixing derived from 3D models" published in Atmos. Chem. Phys., 3, 1007â€“1021, 2003. Atmospheric Chemistry and Physics, 2005, 5, 293-293.	4.9	0
129	Are Climate Restricted Areas a Viable Interim Climate Mitigation Option over the North Atlantic?. , 2016, , .		0
130	Calculating the global mass exchange between stratosphere and troposphere. Annales Geophysicae, 1996, 14, 431.	1.6	0