Volker Grewe

List of Publications by Year
in descending order

129 papers	6,330 citations	100601 38 h-index	97045 71 g-index
193 all docs	193 docs citations	193 times ranked	5005 citing authors

#	Article	IF	Citations
1	Climate assessment of single flights: Deduction of route specific equivalent CO₂ emissions. International Journal of Sustainable Transportation, 2023, 17, 29-40.	2.1	8
2	Future changes of the atmospheric composition and the impact of climate change. Tellus, Series B: Chemical and Physical Meteorology, 2022, 53, 103.	0.8	12
3	A Comprehensive Survey on Climate Optimal Aircraft Trajectory Planning. Aerospace, 2022, 9, 146.	1.1	19
4	Case Study for Testing the Validity of NOx-Ozone Algorithmic Climate Change Functions for Optimising Flight Trajectories. Aerospace, 2022, 9, 231.	1.1	4
5	Analysis of Aircraft Routing Strategies for North Atlantic Flights by Using AirTraf 2.0. Aerospace, 2021, 8, 33.	1.1	7
6	Mitigation of Non-CO2 Aviationâ€™s Climate Impact by Changing Cruise Altitudes. Aerospace, 2021, 8, 36.	1.1	18
7	Climate Impact Mitigation Potential of European Air Traffic in a Weather Situation with Strong Contrail Formation. Aerospace, 2021, 8, 50.	1.1	12
8	COVID-19 induced lower-tropospheric ozone changes. Environmental Research Letters, 2021, 16, 064005.	2.2	15
9	Evaluating the climate impact of aviation emission scenarios towards the Paris agreement including COVID-19 effects. Nature Communications, 2021, 12, 3841.	5.8	116
10	Influence of weather situation on non-CO₂ aviation climate effects: the REACT4C climate change functions. Atmospheric Chemistry and Physics, 2021, 21, 9151-9172.	1.9	14
11	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.	2.6	8
12	Climate Impact Mitigation Potential of Formation Flight. Aerospace, 2021, 8, 14.	1.1	6
13	Impact of Hybrid-Electric Aircraft on Contrail Coverage. Aerospace, 2020, 7, 147.	1.1	7
14	Assessing the Climate Impact of Formation Flights. Aerospace, 2020, 7, 172.	1.1	7
15	Climate-Optimized Trajectories and Robust Mitigation Potential: Flying ATM4E. Aerospace, 2020, 7, 156.	1.1	28
16	Attributing ozone and its precursors to land transport emissions in Europe and Germany. Atmospheric Chemistry and Physics, 2020, 20, 7843-7873.	1.9	15
17	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.	1.3	6
18	Aviation emissions and climate impacts. , 2020, , 4-15.		1

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19	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.	1.9	9
20	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.	1.3	17
21	The contribution of aviation NO‹sub›x‹/sub› emissions to climate change: are we ignoring methodological flaws?. Environmental Research Letters, 2019, 14, 121003.	2.2	25
22	Algorithmic climate change functions for the use in eco-efficient flight planning. Transportation Research, Part D: Transport and Environment, 2019, 67, 388-405.	3.2	23
23	Potential to reduce the climate impact of aviation by climate restricted airspaces. Transport Policy, 2019, 83, 102-110.	3.4	29
24	Quantifying the climate impact of emissions from land-based transport in Germany. Transportation Research, Part D: Transport and Environment, 2018, 65, 825-845.	3.2	12
25	An advanced method of contributing emissions to short-lived chemical species (OH and) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 5 Submodel System (MESSy 2.53). Geoscientific Model Development, 2018, 11, 2049-2066.	1.3	6
26	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.	3.2	28
27	Revisiting the contribution of land transport and shipping emissions to tropospheric ozone. Atmospheric Chemistry and Physics, 2018, 18, 5567-5588.	1.9	26
28	Dynamics and composition of the Asian summer monsoon anticyclone. Atmospheric Chemistry and Physics, 2018, 18, 5655-5675.	1.9	20
29	Feasibility of climate-optimized air traffic routing for trans-Atlantic flights. Environmental Research Letters, 2017, 12, 034003.	2.2	39
30	Cost-Benefit Assessment of Climate-Restricted Airspaces as an Interim Climate Mitigation Option. Journal of Air Transportation, 2017, 25, 27-38.	1.0	10
31	Optimization without limits â€” The world wide air traffic management project. , 2017, , .		5
32	Mitigating the Climate Impact from Aviation: Achievements and Results of the DLR WeCare Project. Aerospace, 2017, 4, 34.	1.1	59
33	A Concept for Multi-Criteria Environmental Assessment of Aircraft Trajectories. Aerospace, 2017, 4, 42.	1.1	30
34	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.	1.3	26
35	Assessing the climate impact of the AHEAD multi-fuel blended wing body. Meteorologische Zeitschrift, 2017, 26, 711-725.	0.5	24
36	Eco-efficiency in aviation. Meteorologische Zeitschrift, 2017, 26, 689-696.	0.5	6

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37	The Implications of Intermediate Stop Operations on Aviation Emissions and Climate. Meteorologische Zeitschrift, 2017, 26, 697-709.	0.5	24
38	Climate-Compatible Air Transport Systemâ€"Climate Impact Mitigation Potential for Actual and Future Aircraft. Aerospace, 2016, 3, 38.	1.1	24
39	Earth System Chemistry integrated Modelling (ESCiMo) with the Modular Earth Submodel System (MESSy) versionÂ2.51. Geoscientific Model Development, 2016, 9, 1153-1200.	1.3	208
40	Air traffic simulation in chemistry-climate model EMAC 2.41: AirTraf 1.0. Geoscientific Model Development, 2016, 9, 3363-3392.	1.3	11
41	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.	3.2	47
42	Are Climate Restricted Areas a Viable Interim Climate Mitigation Option over the North Atlantic?. , 2016, , .		0
43	Cost-Benefit Assessment of 2D and 3D Climate And Weather Optimized Trajectories. , 2016, , .		7
44	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.	1.9	80
45	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.	1.9	28
46	Aircraft routing with minimal climate impact: the REACT4C climate cost function modelling approach (V1.0). Geoscientific Model Development, 2014, 7, 175-201.	1.3	51
47	The influence of future non-mitigated road transport emissions on regional ozone exceedences at global scale. Atmospheric Environment, 2014, 89, 633-641.	1.9	4
48	Reduction of the air traffic's contribution to climate change: A REACT4C case study. Atmospheric Environment, 2014, 94, 616-625.	1.9	40
49	On the theory of mass conserving transformations for Lagrangian methods in 3DÂatmosphere-chemistry models. Meteorologische Zeitschrift, 2014, 23, 441-447.	0.5	5
50	A generalized tagging method. Geoscientific Model Development, 2013, 6, 247-253.	1.3	29
51	A new method to diagnose the contribution of anthropogenic activities to temperature: temperature tagging. Geoscientific Model Development, 2013, 6, 417-427.	1.3	1
52	Drivers of hemispheric differences in return dates of mid-latitude stratospheric ozone to historical levels. Atmospheric Chemistry and Physics, 2013, 13, 7279-7300.	1.9	8
53	The ACCENT-protocol: a framework for benchmarking and model evaluation. Geoscientific Model Development, 2012, 5, 611-618.	1.3	12
54	Future impact of traffic emissions on atmospheric ozone and OH based on two scenarios. Atmospheric Chemistry and Physics, 2012, 12, 12211-12225.	1.9	13

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55	Aviationâ€induced radiative forcing and surface temperature change in dependency of the emission altitude. Journal of Geophysical Research, 2012, 117, .	3.3	42
56	Attributing ozone to NOx emissions: Implications for climate mitigation measures. Atmospheric Environment, 2012, 59, 102-107.	1.9	74
57	Chemical Composition of the Atmosphere. Research Topics in Aerospace, 2012, , 17-35.	0.6	8
58	Evaluating Climate-Chemistry Response and Mitigation Options with AirClim. Research Topics in Aerospace, 2012, , 591-606.	0.6	1
59	Climate Optimized Air Transport. Research Topics in Aerospace, 2012, , 727-746.	0.6	15
60	Thunderstorms: Trace Species Generators. Research Topics in Aerospace, 2012, , 115-133.	0.6	4
61	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.	1.9	30
62	Radiative forcing due to changes in ozone and methane caused by the transport sector. Atmospheric Environment, 2011, 45, 387-394.	1.9	87
63	Quantifying the contributions of individual NOx sources to the trend in ozone radiative forcing. Atmospheric Environment, 2011, 45, 2860-2868.	1.9	63
64	A quasi chemistry-transport model mode for EMAC. Geoscientific Model Development, 2011, 4, 195-206.	1.3	47
65	Attribution of ozone changes to dynamical and chemical processes in CCMs and CTMs. Geoscientific Model Development, 2011, 4, 271-286.	1.3	25
66	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.	1.1	20
67	Climate functions for the use in multi-disciplinary optimisation in the pre-design of supersonic business jet. Aeronautical Journal, 2010, 114, 259-269.	1.1	7
68	Transport impacts on atmosphere and climate: Aviation. Atmospheric Environment, 2010, 44, 4678-4734.	1.9	565
69	On the attribution of contributions of atmospheric trace gases to emissions in atmospheric model applications. Geoscientific Model Development, 2010, 3, 487-499.	1.3	65
70	Atmospheric composition change â€“ global and regional air quality. Atmospheric Environment, 2009, 43, 5268-5350.	1.9	714
71	Climate Impact Evaluation as Part of Aircraft Pre-Design. , 2009, , .		1
72	Integrated Analysis and Design Environment for a Climate Compatible Air Transport System. , 2009, , .		10

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73	The impact of traffic emissions on atmospheric ozone and OH: results from QUANTIFY. Atmospheric Chemistry and Physics, 2009, 9, 3113-3136.	1.9	143
74	Comment on "Quantitative performance metrics for stratospheric-resolving chemistry-climate models" by Waugh and Eyring (2008). Atmospheric Chemistry and Physics, 2009, 9, 9101-9110.	1.9	9
75	The simulation of the Antarctic ozone hole by chemistry-climate models. Atmospheric Chemistry and Physics, 2009, 9, 6363-6376.	1.9	36
76	Implications of Lagrangian transport for simulations with a coupled chemistry-climate model. Atmospheric Chemistry and Physics, 2009, 9, 5489-5504.	1.9	61
77	Impact of Lightning on Air Chemistry and Climate. , 2009, , 537-549.		7
78	Investigating lower stratospheric model transport: Lagrangian calculations of mean age and age spectra in the GCM ECHAM4. Climate Dynamics, 2008, 30, 225-238.	1.7	19
79	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.	1.7	78
80	Radiative forcing from particle emissions by future supersonic aircraft. Atmospheric Chemistry and Physics, 2008, 8, 4069-4084.	1.9	12
81	Do supersonic aircraft avoid contrails?. Atmospheric Chemistry and Physics, 2008, 8, 955-967.	1.9	10
82	AirClim: an efficient tool for climate evaluation of aircraft technology. Atmospheric Chemistry and Physics, 2008, 8, 4621-4639.	1.9	99
83	Global impact of road traffic emissions on tropospheric ozone. Atmospheric Chemistry and Physics, 2007, 7, 1707-1718.	1.9	42
84	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.	1.9	40
85	Impact of climate variability on tropospheric ozone. Science of the Total Environment, 2007, 374, 167-181.	3.9	75
86	Solar cycle effect delays onset of ozone recovery. Geophysical Research Letters, 2006, 33, .	1.5	36
87	Comparison of recent modeled and observed trends in total column ozone. Journal of Geophysical Research, 2006, 111, .	3.3	31
88	Correction to â€œSolar cycle effect delays onset of ozone recoveryâ€• Geophysical Research Letters, 2006, 33, .	1.5	1
89	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
90	Hemispheric ozone variability indices derived from satellite observations and comparison to a coupled chemistry-climate model. Atmospheric Chemistry and Physics, 2006, 6, 5105-5120.	1.9	2

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91	Radiative forcing since preindustrial times due to ozone change in the troposphere and the lower stratosphere. Atmospheric Chemistry and Physics, 2006, 6, 575-599.	1.9	140
92	Interannual variation patterns of total ozone and lower stratospheric temperature in observations and model simulations. Atmospheric Chemistry and Physics, 2006, 6, 349-374.	1.9	48
93	The origin of ozone. Atmospheric Chemistry and Physics, 2006, 6, 1495-1511.	1.9	62
94	Aviation radiative forcing in 2000: An update on IPCC (1999). Meteorologische Zeitschrift, 2005, 14, 555-561.	0.5	251
95	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.	1.9	109
96	Simulation of stratospheric water vapor trends: impact on stratospheric ozone chemistry. Atmospheric Chemistry and Physics, 2005, 5, 1257-1272.	1.9	117
97	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.	1.9	0
98	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.	1.9	49
99	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.	1.2	14
100	Impact of dynamically induced ozone mini-hole events on PSC formation and chemical ozone destruction. Advances in Space Research, 2004, 33, 1062-1067.	1.2	7
101	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.	1.9	41
102	A comparison of model-simulated trends in stratospheric temperatures. Quarterly Journal of the Royal Meteorological Society, 2003, 129, 1565-1588.	1.0	189
103	Impact of ozone mini-holes on the heterogeneous destruction of stratospheric ozone. Chemosphere, 2003, 50, 177-190.	4.2	5
104	Climatologies of subtropical mixing derived from 3D models. Atmospheric Chemistry and Physics, 2003, 3, 1007-1021.	1.9	10
105	Sensitivity studies of oxidative changes in the troposphere in 2100 using the GISS GCM. Atmospheric Chemistry and Physics, 2003, 3, 1267-1283.	1.9	20
106	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.	1.9	61
107	Lightning and thunderstorms, Part I: Observational data and model results. Meteorologische Zeitschrift, 2002, 11, 379-393.	0.5	13
108	Model intercomparison of the transport of aircraft-like emissions from sub- and supersonic aircraft. Meteorologische Zeitschrift, 2002, 11, 151-159.	0.5	20

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109	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
110	Dynamic-chemical coupling of the upper troposphere and lower stratosphere region. Chemosphere, 2002, 47, 851-861.	4.2	11
111	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.	0.5	45
112	Interaction of atmospheric chemistry and climate and its impact on stratospheric ozone. Climate Dynamics, 2002, 18, 501-517.	1.7	59
113	Deep convective transport in a two-dimensional model: Effects on lower stratospheric aerosols and ozone. Meteorologische Zeitschrift, 2002, 11, 187-196.	0.5	1
114	Impact of aircraft NOx emissions. Part 2: Effects of lowering the flight altitude. Meteorologische Zeitschrift, 2002, 11, 197-205.	0.5	36
115	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
116	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
117	Results of an interactively coupled atmospheric chemistry â€“ general circulation model: Comparison with observations. Annales Geophysicae, 2001, 19, 435-457.	0.6	76
118	Estimate of the climate impact of cryoplanes. Aerospace Science and Technology, 2001, 5, 73-84.	2.5	27
119	Future changes of the atmospheric composition and the impact of climate change. Tellus, Series B: Chemical and Physical Meteorology, 2001, 53, 103-121.	0.8	9
120	Origin and variability of upper tropospheric nitrogen oxides and ozone at northern mid-latitudes. Atmospheric Environment, 2001, 35, 3421-3433.	1.9	145
121	The impact of greenhouse gases and halogenated species on future solar UV radiation doses. Geophysical Research Letters, 2000, 27, 1127-1130.	1.5	119
122	Klimafaktor Luftfahrt. Physik in Unserer Zeit, 1999, 30, 102-107.	0.0	0
123	Impact of future subsonic aircraft NOxemissions on the atmospheric composition. Geophysical Research Letters, 1999, 26, 47-50.	1.5	27
124	Impact of aircraft NOx emissions on tropospheric and stratospheric ozone. part II. Atmospheric Environment, 1998, 32, 3185-3199.	1.9	59
125	Development of a chemistry module for GCMs: first results of a multiannual integration. Annales Geophysicae, 1998, 16, 205-228.	0.6	99
126	Assessment of the future development of the ozone layer. Geophysical Research Letters, 1998, 25, 3579-3582.	1.5	46

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127	Impact of stratospheric dynamics and chemistry on northern hemisphere midlatitude ozone loss. Journal of Geophysical Research, 1998, 103, 25417-25433.	3.3	17
128	Heterogeneous PSC ozone loss during an ozone mini-hole. Geophysical Research Letters, 1997, 24, 2503-2506.	1.5	13
129	Calculating the global mass exchange between stratosphere and troposphere. Annales Geophysicae, 1996, 14, 431-442.	0.6	49