

# Steffen Beirle

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

88  
papers

2,722  
citations

27  
h-index

50  
g-index

204  
ext. papers

3,331  
ext. citations

5.7  
avg, IF

4.95  
L-index

#	Paper	IF	Citations
88	A new method for inferring city emissions and lifetimes of nitrogen oxides from high-resolution nitrogen dioxide observations: a model study. <i>Atmospheric Chemistry and Physics</i> , <b>2022</b> , 22, 1333-1349	6.8	0
87	Calculating the vertical column density of O <sub>3</sub> during daytime from surface values of pressure, temperature, and relative humidity. <i>Atmospheric Measurement Techniques</i> , <b>2022</b> , 15, 987-1006	4	
86	Global Spatiotemporal Variability of Integrated Water Vapor Derived from GPS, GOME/SCIAMACHY and ERA-Interim: Annual Cycle, Frequency Distribution and Linear Trends. <i>Remote Sensing</i> , <b>2022</b> , 14, 1050	5	1
85	An improved TROPOMI tropospheric NO <sub>2</sub> research product over Europe. <i>Atmospheric Measurement Techniques</i> , <b>2021</b> , 14, 7297-7327	4	4
84	Identification of atmospheric and oceanic teleconnection patterns in a 20-year global data set of the atmospheric water vapour column measured from satellites in the visible spectral range. <i>Atmospheric Chemistry and Physics</i> , <b>2021</b> , 21, 5315-5353	6.8	2
83	Quantitative comparison of measured and simulated O <sub>3</sub> absorptions for one day with extremely low aerosol load over the tropical Atlantic. <i>Atmospheric Measurement Techniques</i> , <b>2021</b> , 14, 3871-3893	4	1
82	Catalog of NO <sub>x</sub> emissions from point sources as derived from the divergence of the NO <sub>2</sub> flux for TROPOMI. <i>Earth System Science Data</i> , <b>2021</b> , 13, 2995-3012	10.5	5
81	MICRU: an effective cloud fraction algorithm designed for UV <sub>vis</sub> satellite instruments with large viewing angles. <i>Atmospheric Measurement Techniques</i> , <b>2021</b> , 14, 3989-4031	4	0
80	Estimating real driving emissions from multi-axis differential optical absorption spectroscopy (MAX-DOAS) measurements at the A60 motorway near Mainz, Germany. <i>Atmospheric Measurement Techniques</i> , <b>2021</b> , 14, 769-783	4	1
79	Evaluation of the coupled high-resolution atmospheric chemistry model system MECO(n) using in situ and MAX-DOAS NO <sub>2</sub> measurements. <i>Atmospheric Measurement Techniques</i> , <b>2021</b> , 14, 5241-5269	4	1
78	Technical note: Evaluation of profile retrievals of aerosols and trace gases for MAX-DOAS measurements under different aerosol scenarios based on radiative transfer simulations. <i>Atmospheric Chemistry and Physics</i> , <b>2021</b> , 21, 12867-12894	6.8	0
77	Observations of iodine monoxide over three summers at the Indian Antarctic bases of Bharati and Maitri. <i>Atmospheric Chemistry and Physics</i> , <b>2021</b> , 21, 11829-11842	6.8	
76	Nitrogen dioxide decline and rebound observed by GOME-2 and TROPOMI during COVID-19 pandemic. <i>Air Quality, Atmosphere and Health</i> , <b>2021</b> , 1-19	5.6	4
75	Intercomparison of MAX-DOAS vertical profile retrieval algorithms: studies on field data from the CINDI-2 campaign. <i>Atmospheric Measurement Techniques</i> , <b>2021</b> , 14, 1-35	4	16
74	Evaluating different methods for elevation calibration of MAX-DOAS (Multi AXis Differential Optical Absorption Spectroscopy) instruments during the CINDI-2 campaign. <i>Atmospheric Measurement Techniques</i> , <b>2020</b> , 13, 685-712	4	7
73	A methodology to constrain carbon dioxide emissions from coal-fired power plants using satellite observations of co-emitted nitrogen dioxide. <i>Atmospheric Chemistry and Physics</i> , <b>2020</b> , 20, 99-116	6.8	16
72	Total column water vapour retrieval from S-5P/TROPOMI in the visible blue spectral range. <i>Atmospheric Measurement Techniques</i> , <b>2020</b> , 13, 2751-2783	4	10

71	Long-term MAX-DOAS measurements of NO <sub>2</sub> , HCHO, and aerosols and evaluation of corresponding satellite data products over Mohali in the Indo-Gangetic Plain. <i>Atmospheric Chemistry and Physics</i> , <b>2020</b> , 20, 14183-14235	6.8	13
70	Inter-comparison of MAX-DOAS measurements of tropospheric HONO slant column densities and vertical profiles during the CINDI-2 campaign. <i>Atmospheric Measurement Techniques</i> , <b>2020</b> , 13, 5087-5116	4	7
69	Validation of Aura-OMI QA4ECV NO <sub>2</sub> climate data records with ground-based DOAS networks: the role of measurement and comparison uncertainties. <i>Atmospheric Chemistry and Physics</i> , <b>2020</b> , 20, 8017-8045	6.8	13
68	The Mainz profile algorithm (MAPA). <i>Atmospheric Measurement Techniques</i> , <b>2019</b> , 12, 1785-1806	4	19
67	Intercomparison of MAX-DOAS vertical profile retrieval algorithms: studies using synthetic data. <i>Atmospheric Measurement Techniques</i> , <b>2019</b> , 12, 2155-2181	4	21
66	Is a scaling factor required to obtain closure between measured and modelled atmospheric O <sub>4</sub> absorptions? An assessment of uncertainties of measurements and radiative transfer simulations for 2 selected days during the MAD-CAT campaign. <i>Atmospheric Measurement Techniques</i> , <b>2019</b> , 12, 2745-2817	4	16
65	An improved total and tropospheric NO <sub>2</sub> column retrieval for GOME-2. <i>Atmospheric Measurement Techniques</i> , <b>2019</b> , 12, 1029-1057	4	9
64	Pinpointing nitrogen oxide emissions from space. <i>Science Advances</i> , <b>2019</b> , 5, eaax9800	14.3	47
63	Vertical Profiles of Tropospheric Ozone From MAX-DOAS Measurements During the CINDI-2 Campaign: Part 1 Development of a New Retrieval Algorithm. <i>Journal of Geophysical Research D: Atmospheres</i> , <b>2018</b> , 123, 10,637	4.4	8
62	The ESA GOME-Evolution Climate water vapor product: a homogenized time series of H <sub>2</sub> O columns from GOME, SCIAMACHY, and GOME-2. <i>Earth System Science Data</i> , <b>2018</b> , 10, 449-468	10.5	8
61	Improving algorithms and uncertainty estimates for satellite NO <sub>2</sub> retrievals: results from the quality assurance for the essential climate variables (QA4ECV) project. <i>Atmospheric Measurement Techniques</i> , <b>2018</b> , 11, 6651-6678	4	115
60	Nitrogen oxides in the global upper troposphere: interpreting cloud-sliced NO <sub>2</sub> observations from the OMI satellite instrument. <i>Atmospheric Chemistry and Physics</i> , <b>2018</b> , 18, 17017-17027	6.8	15
59	Interpreting the time variability of world-wide GPS and GOME/SCIAMACHY integrated water vapour retrievals, using reanalyses as auxiliary tools <b>2018</b> ,		1
58	Top-Down NO Emissions of European Cities Based on the Downwind Plume of Modelled and Space-Borne Tropospheric NO <sub>2</sub> Columns. <i>Sensors</i> , <b>2018</b> , 18,	3.8	15
57	Algorithm theoretical baseline for formaldehyde retrievals from S5P TROPOMI and from the QA4ECV project. <i>Atmospheric Measurement Techniques</i> , <b>2018</b> , 11, 2395-2426	4	73
56	Improved slant column density retrieval of nitrogen dioxide and formaldehyde for OMI and GOME-2A from QA4ECV: intercomparison, uncertainty characterisation, and trends. <i>Atmospheric Measurement Techniques</i> , <b>2018</b> , 11, 4033-4058	4	51
55	The tilt effect in DOAS observations. <i>Atmospheric Measurement Techniques</i> , <b>2017</b> , 10, 4819-4831	4	5
54	Parameterizing the instrumental spectral response function and its changes by a super-Gaussian and its derivatives. <i>Atmospheric Measurement Techniques</i> , <b>2017</b> , 10, 581-598	4	41

53	Ground-based MAX-DOAS observations of tropospheric aerosols, NO <sub>2</sub> , SO <sub>2</sub> and HCHO in Wuxi, China, from 2011 to 2014. <i>Atmospheric Chemistry and Physics</i> , <b>2017</b> , 17, 2189-2215	6.8	62
52	Estimation of the Paris NO <sub>x</sub> emissions from mobile MAX-DOAS observations and CHIMERE model simulations during the MEGAPOLI campaign using the closed integral method. <i>Atmospheric Chemistry and Physics</i> , <b>2017</b> , 17, 7853-7890	6.8	19
51	NO emission trends over Chinese cities estimated from OMI observations during 2005 to 2015. <i>Atmospheric Chemistry and Physics</i> , <b>2017</b> , 17, 9261-9275	6.8	114
50	Validation of OMI, GOME-2A and GOME-2B tropospheric NO <sub>2</sub> , SO <sub>2</sub> and HCHO products using MAX-DOAS observations from 2011 to 2014 in Wuxi, China: investigation of the effects of priori profiles and aerosols on the satellite products. <i>Atmospheric Chemistry and Physics</i> , <b>2017</b> , 17, 5007-5033	6.8	67
49	Detection of water vapour absorption around 363 nm in measured atmospheric absorption spectra and its effect on DOAS evaluations. <i>Atmospheric Chemistry and Physics</i> , <b>2017</b> , 17, 1271-1295	6.8	30
48	In-operation field-of-view retrieval (IFR) for satellite and ground-based DOAS-type instruments applying coincident high-resolution imager data. <i>Atmospheric Measurement Techniques</i> , <b>2017</b> , 10, 881-904	4	10
47	Structural uncertainty in air mass factor calculation for NO <sub>2</sub> and HCHO satellite retrievals. <i>Atmospheric Measurement Techniques</i> , <b>2017</b> , 10, 759-782	4	91
46	MAX-DOAS measurements of HONO slant column densities during the MAD-CAT campaign: inter-comparison, sensitivity studies on spectral analysis settings, and error budget. <i>Atmospheric Measurement Techniques</i> , <b>2017</b> , 10, 3719-3742	4	25
45	The STRatospheric Estimation Algorithm from Mainz (STREAM): estimating stratospheric NO <sub>2</sub> from nadir-viewing satellites by weighted convolution. <i>Atmospheric Measurement Techniques</i> , <b>2016</b> , 9, 2753-2779	4	22
44	Absolute calibration of the colour index and O <sub>4</sub> absorption derived from Multi AXis (MAX-)DOAS measurements and their application to a standardised cloud classification algorithm. <i>Atmospheric Measurement Techniques</i> , <b>2016</b> , 9, 4803-4823	4	25
43	Seasonal variation of tropospheric bromine monoxide over the Rann of Kutch salt marsh seen from space. <i>Atmospheric Chemistry and Physics</i> , <b>2016</b> , 16, 13015-13034	6.8	6
42	NO <sub>x</sub> lifetimes and emissions of cities and power plants in polluted background estimated by satellite observations. <i>Atmospheric Chemistry and Physics</i> , <b>2016</b> , 16, 5283-5298	6.8	105
41	Multi-satellite sensor study on precipitation-induced emission pulses of NO <sub>x</sub> from soils in semi-arid ecosystems. <i>Atmospheric Chemistry and Physics</i> , <b>2016</b> , 16, 9457-9487	6.8	15
40	MAX-DOAS measurements and satellite validation of tropospheric NO <sub>2</sub> and SO <sub>2</sub> vertical column densities at a rural site of North China. <i>Atmospheric Environment</i> , <b>2016</b> , 133, 12-25	5.3	48
39	Validation of OMI, GOME-2A and GOME-2B tropospheric NO <sub>2</sub> , SO <sub>2</sub> and HCHO products using MAX-DOAS observations from 2011 to 2014 in Wuxi, China <b>2016</b> ,		4
38	Intercomparison of aerosol extinction profiles retrieved from MAX-DOAS measurements. <i>Atmospheric Measurement Techniques</i> , <b>2016</b> , 9, 3205-3222	4	43
37	Cloud and aerosol classification for 2 1/2 years of MAX-DOAS observations in Wuxi (China) and comparison to independent data sets <b>2015</b> ,		1
36	Total column water vapour measurements from GOME-2 MetOp-A and MetOp-B. <i>Atmospheric Measurement Techniques</i> , <b>2015</b> , 8, 1111-1133	4	30

35	Abrupt recent trend changes in atmospheric nitrogen dioxide over the Middle East. <i>Science Advances</i> , <b>2015</b> , 1, e1500498	14.3	46
34	In situ, satellite measurement and model evidence on the dominant regional contribution to fine particulate matter levels in the Paris megacity. <i>Atmospheric Chemistry and Physics</i> , <b>2015</b> , 15, 9577-9591	6.8	72
33	A global aerosol classification algorithm incorporating multiple satellite data sets of aerosol and trace gas abundances. <i>Atmospheric Chemistry and Physics</i> , <b>2015</b> , 15, 10597-10618	6.8	26
32	New concepts for the comparison of tropospheric NO <sub>2</sub> column densities derived from car-MAX-DOAS observations, OMI satellite observations and the regional model CHIMERE during two MEGAPOLI campaigns in Paris 2009/10. <i>Atmospheric Measurement Techniques</i> , <b>2015</b> , 8, 2827-2852	4	16
31	Cloud and aerosol classification for 2.5 years of MAX-DOAS observations in Wuxi (China) and comparison to independent data sets. <i>Atmospheric Measurement Techniques</i> , <b>2015</b> , 8, 5133-5156	4	24
30	Detection of Trends and Seasonal Variation in Tropospheric Nitrogen Dioxide over Pakistan. <i>Aerosol and Air Quality Research</i> , <b>2015</b> , 15, 2508-2524	4.6	19
29	A new method for the absolute radiance calibration for UV <sub>vis</sub> measurements of scattered sunlight. <i>Atmospheric Measurement Techniques</i> , <b>2015</b> , 8, 4265-4280	4	4
28	Profile information on CO from SCIAMACHY observations using cloud slicing and comparison with model simulations. <i>Atmospheric Chemistry and Physics</i> , <b>2014</b> , 14, 1717-1732	6.8	7
27	Estimating the volcanic emission rate and atmospheric lifetime of SO <sub>2</sub> from space: a case study for Kīlauea volcano, Hawai'i. <i>Atmospheric Chemistry and Physics</i> , <b>2014</b> , 14, 8309-8322	6.8	64
26	Global patterns of lightning properties derived by OTD and LIS. <i>Natural Hazards and Earth System Sciences</i> , <b>2014</b> , 14, 2715-2726	3.9	39
25	A multi-site intercomparison of integrated water vapour observations for climate change analysis. <i>Atmospheric Measurement Techniques</i> , <b>2014</b> , 7, 2487-2512	4	47
24	Cloud detection and classification based on MAX-DOAS observations. <i>Atmospheric Measurement Techniques</i> , <b>2014</b> , 7, 1289-1320	4	45
23	Total column water vapour measurements from GOME-2 MetOp-A and MetOp-B <b>2014</b> ,		5
22	MAX-DOAS observations of the total atmospheric water vapour column and comparison with independent observations. <i>Atmospheric Measurement Techniques</i> , <b>2013</b> , 6, 131-149	4	22
21	A feasibility study for the retrieval of the total column precipitable water vapour from satellite observations in the blue spectral range. <i>Atmospheric Measurement Techniques</i> , <b>2013</b> , 6, 2593-2605	4	22
20	Linearisation of the effects of spectral shift and stretch in DOAS analysis. <i>Atmospheric Measurement Techniques</i> , <b>2013</b> , 6, 661-675	4	16
19	Cloud detection and classification based on MAX-DOAS observations <b>2013</b> ,		1
18	Tropospheric NO <sub>2</sub> vertical column densities over Beijing: results of the first three years of ground-based MAX-DOAS measurements (2008-2011) and satellite validation. <i>Atmospheric Chemistry and Physics</i> , <b>2013</b> , 13, 1547-1567	6.8	122

17	Systematic investigation of bromine monoxide in volcanic plumes from space by using the GOME-2 instrument. <i>Atmospheric Chemistry and Physics</i> , <b>2013</b> , 13, 4749-4781	6.8	51
16	Technical Note: Temporal change in averaging kernels as a source of uncertainty in trend estimates of carbon monoxide retrieved from MOPITT. <i>Atmospheric Chemistry and Physics</i> , <b>2013</b> , 13, 11307-11316	6.8	16
15	Re-evaluating the NO <sub>2</sub> hotspot over the South African Highveld. <i>South African Journal of Science</i> , <b>2012</b> , 108,	1.3	29
14	Megacity emissions and lifetimes of nitrogen oxides probed from space. <i>Science</i> , <b>2011</b> , 333, 1737-9	33.3	295
13	The Monte Carlo atmospheric radiative transfer model McArtim: Introduction and validation of Jacobians and 3D features. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , <b>2011</b> , 112, 1119-1137	2.1	139
12	Applications of Satellite Observations of Tropospheric Composition. <i>Physics of Earth and Space Environments</i> , <b>2011</b> , 365-449		8
11	Simultaneous global observations of glyoxal and formaldehyde from space. <i>Geophysical Research Letters</i> , <b>2006</b> , 33,	4.9	237
10	GOME Observations of Stratospheric Trace Gas Distributions during the Splitting Vortex Event in the Antarctic Winter of 2002. Part I: Measurements. <i>Journals of the Atmospheric Sciences</i> , <b>2005</b> , 62, 778-785	2.1	31
9	CO profiles from SCIAMACHY observations using cloud slicing and comparison with model simulations		2
8	Estimating the volcanic emission rate and atmospheric lifetime of SO <sub>2</sub> from space: a case study for Kīlauea volcano, Hawai'i		5
7	NO <sub>x</sub> lifetimes and emissions of hotspots in polluted background estimated by satellite observations		3
6	The tilt-effect in DOAS observations		2
5	Improving algorithms and uncertainty estimates for satellite NO <sub>2</sub> retrievals: Results from the Quality Assurance for Essential Climate Variables (QA4ECV) project		2
4	Intercomparison of MAX-DOAS Vertical Profile Retrieval Algorithms: Studies using Synthetic Data		4
3	Intercomparison of MAX-DOAS vertical profile retrieval algorithms: studies on field data from the CINDI-2 campaign		10
2	A multi-site techniques intercomparison of integrated water vapour observations for climate change analysis		5
1	Global patterns of lightning properties derived by OTD and LIS		6