Klaas Folkert Boersma

List of Publications by Year
in descending order

121	13,645	17440 63	26610 107
papers	citations	h-index	g-index

197	197	197	6940
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Error analysis for tropospheric NO2retrieval from space. Journal of Geophysical Research, 2004, 109, n/a-n/a.	3.3	606
2	An improved tropospheric NO₂ column retrieval algorithm for the Ozone Monitoring Instrument. Atmospheric Measurement Techniques, 2011, 4, 1905-1928.	3.1	550
3	Aura OMI observations of regional SO₂ and NO₂ pollution changes from 2005 to 2015. Atmospheric Chemistry and Physics, 2016, 16, 4605-4629.	4.9	521
4	Near-real time retrieval of tropospheric NO₂ from OMI. Atmospheric Chemistry and Physics, 2007, 7, 2103-2118.	4.9	469
5	Megacity Emissions and Lifetimes of Nitrogen Oxides Probed from Space. Science, 2011, 333, 1737-1739.	12.6	402
6	Transpacific transport of ozone pollution and the effect of recent Asian emission increases on air quality in North America: an integrated analysis using satellite, aircraft, ozonesonde, and surface observations. Atmospheric Chemistry and Physics, 2008, 8, 6117-6136.	4.9	369
7	Trends, seasonal variability and dominant NO_x source derived from a ten year record of NO₂ measured from space. Journal of Geophysical Research, 2008, 113, .	3.3	352
8	A new stratospheric and tropospheric NO₂ retrieval algorithm for nadir-viewing satellite instruments: applications to OMI. Atmospheric Measurement Techniques, 2013, 6, 2607-2626.	3.1	269
9	Averaging kernels for DOAS total-column satellite retrievals. Atmospheric Chemistry and Physics, 2003, 3, 1285-1291.	4.9	266
10	Algorithm for NO/sub 2/ vertical column retrieval from the ozone monitoring instrument. IEEE Transactions on Geoscience and Remote Sensing, 2006, 44, 1245-1258.	6.3	261
11	The Ozone Monitoring Instrument: overview of 14 years in space. Atmospheric Chemistry and Physics, 2018, 18, 5699-5745.	4.9	259
12	Rapid increases in tropospheric ozone production and export from China. Nature Geoscience, 2015, 8, 690-695.	12.9	256
13	The global chemistry transport model TM5: description and evaluation of the tropospheric chemistry version 3.0. Geoscientific Model Development, 2010, 3, 445-473.	3.6	251
14	Detection of the trend and seasonal variation in tropospheric NO2over China. Journal of Geophysical Research, 2006, 111, .	3.3	247
15	Spatial distribution of isoprene emissions from North America derived from formaldehyde column measurements by the OMI satellite sensor. Journal of Geophysical Research, 2008, 113, .	3.3	234
16	Decadal changes in global surface NO_{<i>x</i>} emissions from multi-constituent satellite data assimilation. Atmospheric Chemistry and Physics, 2017, 17, 807-837.	4.9	228
17	Indirect validation of tropospheric nitrogen dioxide retrieved from the OMI satellite instrument: Insight into the seasonal variation of nitrogen oxides at northern midlatitudes. Journal of Geophysical Research, 2010, 115, .	3.3	218
18	Highâ€Resolution Mapping of Nitrogen Dioxide With TROPOMI: First Results and Validation Over the Canadian Oil Sands. Geophysical Research Letters, 2019, 46, 1049-1060.	4.0	209

#	ARTICLE	IF	CITATIONS
19	Validation of urban NO₂ concentrations and their diurnal and seasonal variations observed from the SCIAMACHY and OMI sensors using in situ surface measurements in Israeli cities. Atmospheric Chemistry and Physics, 2009, 9, 3867-3879.	4.9	205
20	Validation of OMI tropospheric NO2 observations during INTEX-B and application to constrain NOxNOx emissions over the eastern United States and Mexico. Atmospheric Environment, 2008, 42, 4480-4497.	4.1	190
21	Improving algorithms and uncertainty estimates for satellite NO₂ retrievals: results from the quality assurance for the essential climate variables (QA4ECV) project. Atmospheric Measurement Techniques, 2018, 11, 6651-6678.	3.1	187
22	S5P TROPOMI NO₂ slant column retrieval: method, stability, uncertainties and comparisons with OMI. Atmospheric Measurement Techniques, 2020, 13, 1315-1335.	3.1	170
23	Constraint of anthropogenic NO_x emissions in China from different sectors: a new methodology using multiple satellite retrievals. Atmospheric Chemistry and Physics, 2010, 10, 63-78.	4.9	166
24	Intercomparison of SCIAMACHY and OMI tropospheric NO₂ columns: Observing the diurnal evolution of chemistry and emissions from space. Journal of Geophysical Research, 2008, 113, .	3.3	165
25	Comparison of OMI NO₂ tropospheric columns with an ensemble of global and European regional air quality models. Atmospheric Chemistry and Physics, 2010, 10, 3273-3296.	4.9	165
26	Evaluating a Spaceâ€Based Indicator of Surface Ozoneâ€NO_{<i>x</i>}â€VOC Sensitivity Over Midlatitude Source Regions and Application to Decadal Trends. Journal of Geophysical Research D: Atmospheres, 2017, 122, 10-461.	3.3	165
27	Retrieving tropospheric nitrogen dioxide from the Ozone Monitoring Instrument: effects of aerosols, surface reflectance anisotropy, and vertical profile of nitrogen dioxide. Atmospheric Chemistry and Physics, 2014, 14, 1441-1461.	4.9	159
28	Reductions in nitrogen oxides over Europe driven by environmental policy and economic recession. Scientific Reports, 2012, 2, 265.	3.3	157
29	Eight-component retrievals from ground-based MAX-DOAS observations. Atmospheric Measurement Techniques, 2011, 4, 1027-1044.	3.1	150
30	Ground-based validation of the Copernicus Sentinel-5P TROPOMI NO₂ measurements with the NDACC ZSL-DOAS, MAX-DOAS and Pandonia global networks. Atmospheric Measurement Techniques, 2021, 14, 481-510.	3.1	142
31	Assessing the distribution and growth rates of NO_{<i>x</i>} emission sources by inverting a 10â€year record of NO₂ satellite columns. Geophysical Research Letters, 2008, 35, .	4.0	140
32	Unexpected slowdown of US pollutant emission reduction in the past decade. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 5099-5104.	7.1	137
33	Satellite-based estimates of decline and rebound in Chinaâ€™s CO ₂ emissions during COVID-19 pandemic. Science Advances, 2020, 6, .	10.3	136
34	Worldwide biogenic soil NO_x emissions inferred from OMI NO₂ observations. Atmospheric Chemistry and Physics, 2014, 14, 10363-10381.	4.9	134
35	Structural uncertainty in air mass factor calculation for NO₂ and HCHO satellite retrievals. Atmospheric Measurement Techniques, 2017, 10, 759-782.	3.1	133
36	Inferring Changes in Summertime Surface Ozoneâ€“NO_{<i>x</i>}â€“VOC Chemistry over U.S. Urban Areas from Two Decades of Satellite and Ground-Based Observations. Environmental Science & Technology, 2020, 54, 6518-6529.	10.0	133

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37	Improved satellite retrievals of NO₂ and SO₂ over the Canadian oil sands and comparisons with surface measurements. Atmospheric Chemistry and Physics, 2014, 14, 3637-3656.	4.9	132
38	Simultaneous assimilation of satellite NO₂, O₃, CO, and HNO₃ data for the analysis of tropospheric chemical composition and emissions. Atmospheric Chemistry and Physics, 2012, 12, 9545-9579.	4.9	130
39	Multi-model ensemble simulations of tropospheric NO₂ compared with GOME retrievals for the year 2000. Atmospheric Chemistry and Physics, 2006, 6, 2943-2979.	4.9	127
40	Algorithm theoretical baseline for formaldehyde retrievals from S5P TROPOMI and from the QA4ECV project. Atmospheric Measurement Techniques, 2018, 11, 2395-2426.	3.1	127
41	Key chemical NO_x sink uncertainties and how they influence top-down emissions of nitrogen oxides. Atmospheric Chemistry and Physics, 2013, 13, 9057-9082.	4.9	125
42	Comparison of tropospheric NO₂ from in situ aircraft measurements with nearâ€realâ€time and standard product data from OMI. Journal of Geophysical Research, 2008, 113, .	3.3	122
43	Air quality over the Canadian oil sands: A first assessment using satellite observations. Geophysical Research Letters, 2012, 39, .	4.0	120
44	Trends and trend reversal detection in 2Âdecades of tropospheric NO₂ satellite observations. Atmospheric Chemistry and Physics, 2019, 19, 6269-6294.	4.9	119
45	Reductions of NO₂ detected from space during the 2008 Beijing Olympic Games. Geophysical Research Letters, 2009, 36, .	4.0	113
46	Estimates of lightning NO_x production from GOME satellite observations. Atmospheric Chemistry and Physics, 2005, 5, 2311-2331.	4.9	111
47	The high-resolution version of TM5-MP for optimized satellite retrievals: description and validation. Geoscientific Model Development, 2017, 10, 721-750.	3.6	108
48	Validation of OMI tropospheric NO₂ column densities using directâ€Sun mode Brewer measurements at NASA Goddard Space Flight Center. Journal of Geophysical Research, 2008, 113, .	3.3	106
49	Intercomparison of slant column measurements of NO₂ and O₄ by MAX-DOAS and zenith-sky UV and visible spectrometers. Atmospheric Measurement Techniques, 2010, 3, 1629-1646.	3.1	106
50	Quantitative bias estimates for tropospheric NO₂ columns retrieved from SCIAMACHY, OMI, and GOME-2 using a common standard for East Asia. Atmospheric Measurement Techniques, 2012, 5, 2403-2411.	3.1	105
51	Intercomparison of SCIAMACHY nitrogen dioxide observations, in situ measurements and air quality modeling results over Western Europe. Journal of Geophysical Research, 2007, 112, .	3.3	103
52	Testing and improving OMI DOMINO tropospheric NO₂ using observations from the DANDELIONS and INTEXâ€B validation campaigns. Journal of Geophysical Research, 2010, 115, .	3.3	103
53	Evaluation of stratospheric NO₂retrieved from the Ozone Monitoring Instrument: Intercomparison, diurnal cycle, and trending. Journal of Geophysical Research, 2011, 116, .	3.3	96
54	Accounting for non-linear chemistry of ship plumes in the GEOS-Chem global chemistry transport model. Atmospheric Chemistry and Physics, 2011, 11, 11707-11722.	4.9	91

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55	An aerosol boomerang: Rapid aroundâ€theâ€world transport of smoke from the December 2006 Australian forest fires observed from space. Journal of Geophysical Research, 2009, 114, .	3.3	90
56	An improved tropospheric NO₂ retrieval for OMI observations in the vicinity of mountainous terrain. Atmospheric Measurement Techniques, 2009, 2, 401-416.	3.1	88
57	Constraints on ship NO_x emissions in Europe using GEOS-Chem and OMI satellite NO₂ observations. Atmospheric Chemistry and Physics, 2014, 14, 1353-1369.	4.9	87
58	Evaluations of NO_x and highly reactive VOC emission inventories in Texas and their implications for ozone plume simulations during the Texas Air Quality Study 2006. Atmospheric Chemistry and Physics, 2011, 11, 11361-11386.	4.9	85
59	SCIAMACHY tropospheric NO₂ over Switzerland: estimates of NO_x lifetimes and impact of the complex Alpine topography on the retrieval. Atmospheric Chemistry and Physics, 2007, 7, 5971-5987.	4.9	83
60	The Cabauw Intercomparison campaign for Nitrogen Dioxide measuring Instruments (CINDI): design, execution, and early results. Atmospheric Measurement Techniques, 2012, 5, 457-485.	3.1	83
61	Influence of aerosols and surface reflectance on satellite NO₂ retrieval: seasonal and spatial characteristics and implications for NO_{<i>x</i>} emission constraints. Atmospheric Chemistry and Physics, 2015, 15, 11217-11241.	4.9	75
62	Improved aerosol correction for OMI tropospheric NO₂ retrieval over East Asia: constraint from CALIOP aerosol vertical profile. Atmospheric Measurement Techniques, 2019, 12, 1-21.	3.1	75
63	Improved slant column density retrieval of nitrogen dioxide and formaldehyde for OMI and GOME-2A from QA4ECV: intercomparison, uncertainty characterisation, and trends. Atmospheric Measurement Techniques, 2018, 11, 4033-4058.	3.1	74
64	Sentinel-5P TROPOMI NO₂ retrieval: impact of version v2.2 improvements and comparisons with OMI and ground-based data. Atmospheric Measurement Techniques, 2022, 15, 2037-2060.	3.1	74
65	Tropospheric vertical distribution of tropical Atlantic ozone observed by TES during the northern African biomass burning season. Geophysical Research Letters, 2007, 34, .	4.0	71
66	Improved spectral fitting of nitrogen dioxide from OMI in the 405â€“465 nm window. Atmospheric Measurement Techniques, 2015, 8, 1685-1699.	3.1	71
67	Assessment of the quality of TROPOMI high-spatial-resolution NO₂ data products in the Greater Toronto Area. Atmospheric Measurement Techniques, 2020, 13, 2131-2159.	3.1	69
68	Global satellite analysis of the relation between aerosols and short-lived trace gases. Atmospheric Chemistry and Physics, 2011, 11, 1255-1267.	4.9	65
69	Traffic restrictions associated with the Sino-African summit: Reductions of NOxdetected from space. Geophysical Research Letters, 2007, 34, .	4.0	63
70	What can we learn about ship emission inventories from measurements of air pollutants over the Mediterranean Sea?. Atmospheric Chemistry and Physics, 2009, 9, 6815-6831.	4.9	58
71	Comparison of GOME tropospheric NO₂ columns with NO₂ profiles deduced from ground-based in situ measurements. Atmospheric Chemistry and Physics, 2006, 6, 3211-3229.	4.9	57
72	Satellite observations indicate substantial spatiotemporal variability in biomass burning NO_x emission factors for South America. Atmospheric Chemistry and Physics, 2014, 14, 3929-3943.	4.9	57

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73	Comparative assessment of TROPOMI and OMI formaldehyde observations and validation against MAX-DOAS network column measurements. Atmospheric Chemistry and Physics, 2021, 21, 12561-12593.	4.9	57
74	Representativeness errors in comparing chemistry transport and chemistry climate models with satellite UVâ€“Vis tropospheric column retrievals. Geoscientific Model Development, 2016, 9, 875-898.	3.6	55
75	Updated tropospheric chemistry reanalysis and emission estimates, TCR-2, for 2005â€“2018. Earth System Science Data, 2020, 12, 2223-2259.	9.9	54
76	Accounting for surface reflectance anisotropy in satellite retrievals of tropospheric NO₂. Atmospheric Measurement Techniques, 2010, 3, 1185-1203.	3.1	53
77	A Decade of Change in NO₂ and SO₂ over the Canadian Oil Sands As Seen from Space. Environmental Science & Technology, 2016, 50, 331-337.	10.0	52
78	Balance of Emission and Dynamical Controls on Ozone During the Koreaâ€United States Air Quality Campaign From Multiconstituent Satellite Data Assimilation. Journal of Geophysical Research D: Atmospheres, 2019, 124, 387-413.	3.3	51
79	Substantial Underestimation of Post-Harvest Burning Emissions in the North China Plain Revealed by Multi-Species Space Observations. Scientific Reports, 2016, 6, 32307.	3.3	49
80	Ozone production in boreal fire smoke plumes using observations from the Tropospheric Emission Spectrometer and the Ozone Monitoring Instrument. Journal of Geophysical Research, 2009, 114, .	3.3	48
81	Warmer spring alleviated the impacts of 2018 European summer heatwave and drought on vegetation photosynthesis. Agricultural and Forest Meteorology, 2020, 295, 108195.	4.8	48
82	Comparison of OMI NO₂ observations and their seasonal and weekly cycles with ground-based measurements in Helsinki. Atmospheric Measurement Techniques, 2016, 9, 5203-5212.	3.1	46
83	Anthropogenic emissions of NO<i>_x</i>over China: Reconciling the difference of inverse modeling results using GOME-2 and OMI measurements. Journal of Geophysical Research D: Atmospheres, 2014, 119, 7732-7740.	3.3	45
84	OMI tropospheric NO₂ air mass factors over South America: effects of biomass burning aerosols. Atmospheric Measurement Techniques, 2015, 8, 3831-3849.	3.1	43
85	Satellite NO2 data improve national land use regression models for ambient NO2 in a small densely populated country. Atmospheric Environment, 2015, 105, 173-180.	4.1	43
86	The global economic cycle and satelliteâ€derived NO₂ trends over shipping lanes. Geophysical Research Letters, 2012, 39, .	4.0	42
87	Comparing OMI-based and EPA AQS in situ NO₂ trends: towards understanding surface NO_{<i>x</i>} emission changes. Atmospheric Measurement Techniques, 2018, 11, 3955-3967.	3.1	41
88	Validation of six years of TES tropospheric ozone retrievals with ozonesonde measurements: implications for spatial patterns and temporal stability in the bias. Atmospheric Measurement Techniques, 2013, 6, 1413-1423.	3.1	39
89	European NO_{<i>x</i>} emissions in WRF-Chem derived from OMI: impacts on summertime surface ozone. Atmospheric Chemistry and Physics, 2019, 19, 11821-11841.	4.9	39
90	A new TROPOMI product for tropospheric NO₂ columns over East Asia with explicit aerosol corrections. Atmospheric Measurement Techniques, 2020, 13, 4247-4259.	3.1	38

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91	Ships going slow in reducing their NOx emissions: changes in 2005â€“2012 ship exhaust inferred from satellite measurements over Europe. Environmental Research Letters, 2015, 10, 074007.	5.2	34
92	Satellite observations and model simulations of tropospheric NO₂ columns over south-eastern Europe. Atmospheric Chemistry and Physics, 2009, 9, 6119-6134.	4.9	32
93	Evaluation of high resolution simulated and OMI retrieved tropospheric NO2 column densities over Southeastern Europe. Atmospheric Research, 2013, 122, 55-66.	4.1	31
94	Validation of tropospheric NO₂ column measurements of GOME-2A and OMI using MAX-DOAS and direct sun network observations. Atmospheric Measurement Techniques, 2020, 13, 6141-6174.	3.1	31
95	Validation of Aura-OMI QA4ECV NO₂ climate data records with ground-based DOAS networks: the role of measurement and comparison uncertainties. Atmospheric Chemistry and Physics, 2020, 20, 8017-8045.	4.9	29
96	Analysis of stratospheric NO₂ trends above Jungfraujoch using ground-based UV-visible, FTIR, and satellite nadir observations. Atmospheric Chemistry and Physics, 2012, 12, 8851-8864.	4.9	27
97	Towards a Traceable Climate Service: Assessment of Quality and Usability of Essential Climate Variables. Remote Sensing, 2019, 11, 1186.	4.0	26
98	The zonal structure of tropical O₃ and CO as observed by the Tropospheric Emission Spectrometer in November 2004 â€“ Part 2: Impact of surface emissions on O₃ and its precursors. Atmospheric Chemistry and Physics, 2009, 9, 3563-3582.	4.9	25
99	Intercomparison of daytime stratospheric NO₂ satellite retrievals and model simulations. Atmospheric Measurement Techniques, 2014, 7, 2203-2225.	3.1	25
100	Identification of surface NO x emission sources on a regional scale using OMI NO 2. Atmospheric Environment, 2015, 101, 82-93.	4.1	25
101	The importance of surface reflectance anisotropy for cloud and NO₂ retrievals from GOME-2 and OMI. Atmospheric Measurement Techniques, 2018, 11, 4509-4529.	3.1	25
102	Characterization of OMI tropospheric NO₂ over the Baltic Sea region. Atmospheric Chemistry and Physics, 2014, 14, 7795-7805.	4.9	24
103	Top-Down NOX Emissions of European Cities Based on the Downwind Plume of Modelled and Space-Borne Tropospheric NO2 Columns. Sensors, 2018, 18, 2893.	3.8	24
104	Quantifying burning efficiency in megacities using the NO₂â^•CO ratio from the Tropospheric Monitoring Instrument (TROPOMI). Atmospheric Chemistry and Physics, 2020, 20, 10295-10310.	4.9	23
105	Quality Assurance Framework Development Based on Six New ECV Data Products to Enhance User Confidence for Climate Applications. Remote Sensing, 2018, 10, 1254.	4.0	20
106	Improved monitoring of shipping NO₂ with TROPOMI: decreasing NO_{<i>x</i>} emissions in European seas during the COVID-19 pandemic. Atmospheric Measurement Techniques, 2022, 15, 1415-1438.	3.1	20
107	New observations of NO₂ in the upper troposphere from TROPOMI. Atmospheric Measurement Techniques, 2021, 14, 2389-2408.	3.1	18
108	Interannual variability of nitrogen oxides emissions from boreal fires in Siberia and Alaska during 1996â€“2011 as observed from space. Environmental Research Letters, 2015, 10, 065004.	5.2	15

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109	Sun-induced fluorescence and near-infrared reflectance of vegetation track the seasonal dynamics of gross primary production over Africa. Biogeosciences, 2021, 18, 2843-2857.	3.3	15
110	Validation of MODIS aerosol observations over the Netherlands with GLOBE student measurements. Journal of Geophysical Research, 2006, 111, .	3.3	14
111	Adverse results of the economic crisis: A study on the emergence of enhanced formaldehyde (HCHO) levels seen from satellites over Greek urban sites. Atmospheric Research, 2019, 224, 42-51.	4.1	13
112	Improved SIFTER v2 algorithm for long-term GOME-2A satellite retrievals of fluorescence with a correction for instrument degradation. Atmospheric Measurement Techniques, 2020, 13, 4295-4315.	3.1	13
113	Limbâ€“nadir matching using non-coincident NO₂ observations: proof of concept and the OMI-minus-OSIRIS prototype product. Atmospheric Measurement Techniques, 2016, 9, 4103-4122.	3.1	9
114	Five years of observations of ozone profiles over Lauder, New Zealand. Journal of Geophysical Research, 2002, 107, ACH 18-1.	3.3	7
115	Qualityâ€assured longâ€term satelliteâ€based leaf area index product. Global Change Biology, 2017, 23, 5027-5028.	9.5	7
116	Comprehensive evaluations of diurnal NO₂ measurements during DISCOVER-AQ 2011: effects of resolution-dependent representation of NO_{<i>x</i>} emissions. Atmospheric Chemistry and Physics, 2021, 21, 11133-11160.	4.9	7
117	The impact of the 2005 Gulf hurricanes on pollution emissions as inferred from Ozone Monitoring Instrument (OMI) nitrogen dioxide. Atmospheric Environment, 2010, 44, 1443-1448.	4.1	6
118	Ozone deposition impact assessments for forest canopies require accurate ozone flux partitioning on diurnal timescales. Atmospheric Chemistry and Physics, 2021, 21, 18393-18411.	4.9	6
119	Analysis of the Anthropogenic and Biogenic NO_x Emissions Over 2008â€“2017: Assessment of the Trends in the 30 Most Populated Urban Areas in Europe. Geophysical Research Letters, 2021, 48, e2020GL092206.	4.0	5
120	Compilation of a NOx Emission Inventory for the Balkan Region Using Satellite Tropospheric NO2 Columns. Springer Atmospheric Sciences, 2013, , 1265-1271.	0.3	2
121	Corrigendum to "Satellite observations and model simulations of tropospheric NO₂ columns over south-eastern Europe" published in Atmos. Chem. Phys., 9, 6119â€“6134, 2009. Atmospheric Chemistry and Physics, 2009, 9, 6495-6496.	4.9	0