Diego G Loyola

List of Publications by Year
in descending order

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119 papers	3,730 citations	109321 35 h-index	175258 52 g-index
229 all docs	229 docs citations	229 times ranked	3318 citing authors

#	Article	IF	Citations
1	Sulfur dioxide retrievals from TROPOMI onboard Sentinel-5 Precursor: algorithm theoretical basis. Atmospheric Measurement Techniques, 2017, 10, 119-153.	3.1	130
2	Algorithm theoretical baseline for formaldehyde retrievals from S5P TROPOMI and from the QA4ECV project. Atmospheric Measurement Techniques, 2018, 11, 2395-2426.	3.1	127
3	Global monitoring of volcanic SO2 degassing with unprecedented resolution from TROPOMI onboard Sentinel-5 Precursor. Scientific Reports, 2019, 9, 2643.	3.3	126
4	Ten years of GOME/ERS-2 total ozone dataâ€"The new GOME data processor (GDP) version 4: 1. Algorithm description. Journal of Geophysical Research, 2006, 111, .	3.3	121
5	Total ozone trends from 1979 to 2016 derived from five merged observational datasets â€“ the emergence into ozone recovery. Atmospheric Chemistry and Physics, 2018, 18, 2097-2117.	4.9	118
6	Operational total and tropospheric NO₂ column retrieval for GOME-2. Atmospheric Measurement Techniques, 2011, 4, 1491-1514.	3.1	114
7	On the Cause of Recent Variations in Lower Stratospheric Ozone. Geophysical Research Letters, 2018, 45, 5718-5726.	4.0	87
8	The operational cloud retrieval algorithms from TROPOMI on board Sentinel-5 Precursor. Atmospheric Measurement Techniques, 2018, 11, 409-427.	3.1	87
9	Volcanic SO₂, BrO and plume height estimations using GOMEâ€2 satellite measurements during the eruption of EyjafjallajÃ¶kull in May 2010. Journal of Geophysical Research, 2012, 117, .	3.3	85
10	State of the Climate in 2014. Bulletin of the American Meteorological Society, 2015, 96, ES1-ES32.	3.3	78
11	TROPOMI/S5P total ozone column data: global ground-based validation and consistency with other satellite missions. Atmospheric Measurement Techniques, 2019, 12, 5263-5287.	3.1	77
12	Volcanic SO₂ plume height retrieval from UV sensors using a full-physics inverse learning machine algorithm. International Journal of Remote Sensing, 2017, 38, 1-27.	2.9	68
13	Satellite Monitoring of Volcanic Sulfur Dioxide Emissions for Early Warning of Volcanic Hazards. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2009, 2, 196-206.	4.9	67
14	TROPOMIâ€“Sentinel-5 Precursor formaldehyde validation using an extensive network of ground-based Fourier-transform infrared stations. Atmospheric Measurement Techniques, 2020, 13, 3751-3767.	3.1	66
15	Homogenized total ozone data records from the European sensors GOME/ERSâ€2, SCIAMACHY/Envisat, and GOMEâ€2/MetOpâ€A. Journal of Geophysical Research D: Atmospheres, 2014, 119, 1639-1662.	3.3	63
16	Ten years of GOME/ERS2 total ozone dataâ€"The new GOME data processor (GDP) version 4: 2. Ground-based validation and comparisons with TOMS V7/V8. Journal of Geophysical Research, 2007, 112, .	3.3	61
17	Global Climate. Bulletin of the American Meteorological Society, 2020, 101, S9-S128.	3.3	61
18	Smart sampling and incremental function learning for very large high dimensional data. Neural Networks, 2016, 78, 75-87.	5.9	60

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19	Comparison of total ozone from the satellite instruments GOME and TOMS with measurements from the Dobson network 1996â€“2000. Atmospheric Chemistry and Physics, 2003, 3, 1409-1419.	4.9	59
20	Multi-core-CPU and GPU-accelerated radiative transfer models based on the discrete ordinate method. Computer Physics Communications, 2014, 185, 3079-3089.	7.5	59
21	Space-based measurements of air quality during the World Expo 2010 in Shanghai. Environmental Research Letters, 2011, 6, 044004.	5.2	58
22	Sulfur dioxide layer height retrieval from Sentinel-5 Precursor/TROPOMI using FP_ILM. Atmospheric Measurement Techniques, 2019, 12, 5503-5517.	3.1	58
23	Ozone profile retrieval from Global Ozone Monitoring Experiment (GOME) data using a neural network approach (Neural Network Ozone Retrieval System (NNORSY)). Journal of Geophysical Research, 2003, 108, .	3.3	57
24	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
25	Seven years of IASI ozone retrievals from FORLI: validation with independent total column and vertical profile measurements. Atmospheric Measurement Techniques, 2016, 9, 4327-4353.	3.1	50
26	Sixteen years of GOME/ERSâ€2 total ozone data: The new directâ€fitting GOME Data Processor (GDP) version 5â€”Algorithm description. Journal of Geophysical Research, 2012, 117, .	3.3	47
27	Validation of the IASI FORLI/EUMETSAT ozone products using satellite (GOME-2), ground-based (Brewerâ€“Dobson, SAOZ, FTIR) and ozonesonde measurements. Atmospheric Measurement Techniques, 2018, 11, 5125-5152.	3.1	47
28	Geophysical validation and long-term consistency between GOME-2/MetOp-A total ozone column and measurements from the sensors GOME/ERS-2, SCIAMACHY/ENVISAT and OMI/Aura. Atmospheric Measurement Techniques, 2012, 5, 2169-2181.	3.1	45
29	Inter-comparison of integrated water vapor from satellite instruments using reference GPS data at the Iberian Peninsula. Remote Sensing of Environment, 2018, 204, 729-740.	11.0	45
30	Overview of the O3M SAF GOME-2 operational atmospheric composition and UV radiation data products and data availability. Atmospheric Measurement Techniques, 2016, 9, 383-407.	3.1	44
31	Total column water vapour measurements from GOME-2 MetOp-A and MetOp-B. Atmospheric Measurement Techniques, 2015, 8, 1111-1133.	3.1	43
32	Validation of the MetOp-A total ozone data from GOME-2 and IASI using reference ground-based measurements at the Iberian Peninsula. Remote Sensing of Environment, 2011, 115, 1380-1386.	11.0	42
33	The GEWEX Water Vapor Assessment archive of water vapour products from satellite observations and reanalyses. Earth System Science Data, 2018, 10, 1093-1117.	9.9	42
34	Comparison of GOME-2/MetOp total ozone data with Brewer spectroradiometer data over the Iberian Peninsula. Annales Geophysicae, 2009, 27, 1377-1386.	1.6	41
35	Tropospheric ozone and nitrogen dioxide measurements in urban and rural regions as seen by IASI and GOMEâ€2. Journal of Geophysical Research D: Atmospheres, 2013, 118, 10,555.	3.3	41
36	GOME-2 total ozone columns from MetOp-A/MetOp-B and assimilation in the MACC system. Atmospheric Measurement Techniques, 2014, 7, 2937-2951.	3.1	41

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37	Anthropogenic and volcanic point source SO₂ emissions derived from TROPOMI on board Sentinel-5 Precursor: first results. Atmospheric Chemistry and Physics, 2020, 20, 5591-5607.	4.9	39
38	Trends of tropical tropospheric ozone from 20 years of European satellite measurements and perspectives for the Sentinel-5 Precursor. Atmospheric Measurement Techniques, 2016, 9, 5037-5051.	3.1	38
39	Satellite-based estimation of surface NO2 concentrations over east-central China: A comparison of POMINO and OMNO2d data. Atmospheric Environment, 2020, 224, 117322.	4.1	37
40	Applications of neural network methods to the processing of earth observation satellite data. Neural Networks, 2006, 19, 168-177.	5.9	36
41	Global Climate. Bulletin of the American Meteorological Society, 2021, 102, S11-S142.	3.3	36
42	TROPOMI aerosol products: evaluation and observations of synoptic-scale carbonaceous aerosol plumes during 2018â€“2020. Atmospheric Measurement Techniques, 2020, 13, 6789-6806.	3.1	36
43	The GODFIT algorithm: a direct fitting approach to improve the accuracy of total ozone measurements from GOME. International Journal of Remote Sensing, 2010, 31, 543-550.	2.9	34
44	Applying FP_ILM to the retrieval of geometry-dependent effective Lambertian equivalent reflectivity (GE_LER) daily maps from UVN satellite measurements. Atmospheric Measurement Techniques, 2020, 13, 985-999.	3.1	34
45	Record low ozone values over the Arctic in boreal spring 2020. Atmospheric Chemistry and Physics, 2021, 21, 617-633.	4.9	34
46	Optical property dimensionality reduction techniques for accelerated radiative transfer performance: Application to remote sensing total ozone retrievals. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 133, 128-135.	2.3	31
47	Satellite-based detection of volcanic sulphur dioxide from recent eruptions in Central and South America. Advances in Geosciences, 0, 14, 35-40.	12.0	31
48	Evaluating a new homogeneous total ozone climate data record from GOME/ERSâ€2, SCIAMACHY/Envisat, and GOMEâ€2/MetOpâ€A. Journal of Geophysical Research D: Atmospheres, 2015, 120, 12,296.	3.3	29
49	Global total ozone recovery trends attributed to ozone-depleting substance (ODS) changes derived from five merged ozone datasets. Atmospheric Chemistry and Physics, 2022, 22, 6843-6859.	4.9	29
50	Acceleration techniques for the discrete ordinate method. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 114, 73-81.	2.3	27
51	Quality assessment of the Ozone_cci Climate Research Data Package (release 2017) â€“ Part 1: Ground-based validation of total ozone column data products. Atmospheric Measurement Techniques, 2018, 11, 1385-1402.	3.1	26
52	Tropical tropospheric ozone column retrieval for GOME-2. Atmospheric Measurement Techniques, 2014, 7, 2513-2530.	3.1	25
53	Validation of the Sentinel-5 Precursor TROPOMI cloud data with Cloudnet, Aura OMI O₂â€“O₂, MODIS, and Suomi-NPP VIIRS. Atmospheric Measurement Techniques, 2021, 14, 2451-2476.	3.1	25
54	Influence of cloud properties on satellite total ozone observations. Journal of Geophysical Research, 2011, 116, .	3.3	24

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55	The GOME-type Total Ozone Essential Climate Variable (GTO-ECV) data record from the ESA Climate Change Initiative. Atmospheric Measurement Techniques, 2015, 8, 3923-3940.	3.1	23
56	Comparison of total water vapor column from GOME-2 on MetOp-A against ground-based GPS measurements at the Iberian Peninsula. Science of the Total Environment, 2015, 533, 317-328.	8.0	23
57	Spatially and temporally coherent reconstruction of tropospheric NO₂ over China combining OMI and GOME-2B measurements. Environmental Research Letters, 2020, 15, 125011.	5.2	23
58	Linearization of the Principal Component Analysis method for radiative transfer acceleration: Application to retrieval algorithms and sensitivity studies. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 125, 1-17.	2.3	22
59	OCRA radiometric cloud fractions for GOME-2 on MetOp-A/B. Atmospheric Measurement Techniques, 2016, 9, 2357-2379.	3.1	21
60	Multi-sensor data merging with stacked neural networks for the creation of satellite long-term climate data records. Eurasip Journal on Advances in Signal Processing, 2012, 2012, .	1.7	20
61	Monitoring and assimilation tests with TROPOMI data in the CAMS system: near-real-time total column ozone. Atmospheric Chemistry and Physics, 2019, 19, 3939-3962.	4.9	20
62	Comparison of GOME total ozone data with ground data from the Spanish Brewer spectroradiometers. Annales Geophysicae, 2008, 26, 401-412.	1.6	20
63	Validation of GOME-2/MetOp-A total water vapour column using reference radiosonde data from the GRUAN network. Atmospheric Measurement Techniques, 2015, 8, 1135-1145.	3.1	19
64	A sulfur dioxide Covariance-Based Retrieval Algorithm (COBRA): application to TROPOMI reveals new emission sources. Atmospheric Chemistry and Physics, 2021, 21, 16727-16744.	4.9	19
65	GOME level 1-to-2 data processor version 30: a major upgrade of the GOME/ERS-2 total ozone retrieval algorithm. Applied Optics, 2005, 44, 7196.	2.1	18
66	Intercomparison of cloud top altitudes as derived using GOME and ATSR-2 instruments onboard ERS-2. Remote Sensing of Environment, 2006, 102, 186-193.	11.0	18
67	A new health check of the ozone layer at global and regional scales. Geophysical Research Letters, 2014, 41, 4363-4372.	4.0	18
68	Radiative transfer models for retrieval of cloud parameters from EPIC/DSCOVR measurements. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 213, 228-240.	2.3	18
69	Total column water vapor retrieval for Global Ozone Monitoring Experience-2 (GOME-2) visible blue observations. Atmospheric Measurement Techniques, 2020, 13, 4169-4193.	3.1	18
70	Comparison of profile total ozone from SBUV (v8.6) with GOME-type and ground-based total ozone for a 16-year period (1996 to 2011). Atmospheric Measurement Techniques, 2014, 7, 1681-1692.	3.1	17
71	A new cloud recognition algorithm for optical sensors. , 1998, , .		16
72	The ESA GOME-Evolution â€œClimateâ€•water vapor product: a homogenized time series of H₂O columns from GOME, SCIAMACHY, and GOME-2. Earth System Science Data, 2018, 10, 449-468.	9.9	16

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73	An improved TROPOMI tropospheric NO₂ research product over Europe. Atmospheric Measurement Techniques, 2021, 14, 7297-7327.	3.1	16
74	The Geospatial Service Infrastructure for DLR's National Remote Sensing Data Library. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2009, 2, 260-269.	4.9	14
75	TROPOMI tropospheric ozone column data: geophysical assessment and comparison to ozonesondes, GOME-2B and OMI. Atmospheric Measurement Techniques, 2021, 14, 7405-7433.	3.1	14
76	Long-term trends of total ozone column over the Iberian Peninsula for the period 1979â€“2008. Atmospheric Environment, 2011, 45, 6283-6290.	4.1	12
77	Discrete ordinate method with matrix exponential for stochastic radiative transfer in broken clouds. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 138, 1-16.	2.3	12
78	A stochastic cloud model for cloud and ozone retrievals from UV measurements. Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 184, 167-179.	2.3	12
79	Inconsistencies in sulfur dioxide emissions from the Canadian oil sands and potential implications. Environmental Research Letters, 2021, 16, 014012.	5.2	11
80	Long-term analysis of GOME in-flight calibration parameters and instrument degradation. Applied Optics, 2008, 47, 4749.	2.1	10
81	Nitrogen dioxide decline and rebound observed by GOME-2 and TROPOMI during COVID-19 pandemic. Air Quality, Atmosphere and Health, 2021, 14, 1737-1755.	3.3	10
82	Linearized radiative transfer models for retrieval of cloud parameters from EPIC/DSCOVR measurements. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 213, 241-251.	2.3	9
83	Evaluating the assimilation of S5P/TROPOMI near real-time SO₂ columns and layer height data into the CAMS integrated forecasting system (CY47R1), based on a case study of the 2019 Raikoke eruption. Geoscientific Model Development, 2022, 15, 971-994.	3.6	9
84	Global, regional and seasonal analysis of total ozone trends derived from the 1995â€“2020 GTO-ECV climate data record. Atmospheric Chemistry and Physics, 2022, 22, 6861-6878.	4.9	9
85	Acceleration of radiative transfer model calculations for the retrieval of trace gases under cloudy conditions. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 135, 58-65.	2.3	8
86	Small-angle modification of the radiative transfer equation for a pseudo-spherical atmosphere. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 114, 82-90.	2.3	7
87	Fast Stochastic Radiative Transfer Models for Trace Gas and Cloud Property Retrievals Under Cloudy Conditions. Springer Series in Light Scattering, 2018, , 231-277.	0.6	7
88	Model Selection in Atmospheric Remote Sensing with an Application to Aerosol Retrieval from DSCOVR/EPIC, Part 1: Theory. Remote Sensing, 2020, 12, 3724.	4.0	7
89	A method for random uncertainties validation and probing the natural variability with application to TROPOMI on board Sentinel-5P total ozone measurements. Atmospheric Measurement Techniques, 2021, 14, 2993-3002.	3.1	7
90	TROPOspheric Monitoring Instrument observations of total column water vapour: Algorithm and validation. Science of the Total Environment, 2022, 821, 153232.	8.0	7

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91	Glyoxal tropospheric column retrievals from TROPOMI â€“ multi-satellite intercomparison and ground-based validation. Atmospheric Measurement Techniques, 2021, 14, 7775-7807.	3.1	7
92	The 1997 El NiÃ±o impact on clouds, water vapour, aerosols and reactive trace gases in the troposphere, as measured by the Global Ozone Monitoring Experiment. Advances in Geosciences, 0, 6, 267-272.	12.0	6
93	Quantification of lightning-produced NO_{<i>x</i>} over the Pyrenees and the Ebro Valley by using different TROPOMI-NO₂ and cloud research products. Atmospheric Measurement Techniques, 2022, 15, 3329-3351.	3.1	6
94	Model Selection in Atmospheric Remote Sensing with Application to Aerosol Retrieval from DSCOVR/EPIC. Part 2: Numerical Analysis. Remote Sensing, 2020, 12, 3656.	4.0	5
95	Comparison of GTO-ECV and adjusted MERRA-2 total ozone columns from the last 2 decades and assessment of interannual variability. Atmospheric Measurement Techniques, 2020, 13, 1633-1654.	3.1	5
96	Volcanic SO₂ effective layer height retrieval for the Ozone Monitoring Instrument (OMI) using a machine-learning approach. Atmospheric Measurement Techniques, 2021, 14, 3673-3691.	3.1	5
97	Volcanic SO₂ layer height by TROPOMI/S5P: evaluation against IASI/MetOp and CALIOP/CALIPSO observations. Atmospheric Chemistry and Physics, 2022, 22, 5665-5683.	4.9	5
98	Hyperspectral Satellite Remote Sensing of Aerosol Parameters: Sensitivity Analysis and Application to TROPOMI/S5P. Frontiers in Environmental Science, 2022, 9, .	3.3	4
99	Improvement of EPIC/DSCOVR Image Registration by Means of Automatic Coastline Detection. Remote Sensing, 2019, 11, 1747.	4.0	3
100	Monitoring ozone in different spectral regimes from space and balloon (Sentinel-4/-5P, TELIS). , 2016, , .		2
101	The use of QBO, ENSO, and NAO perturbations in the evaluation of GOME-2 MetOp A total ozone measurements. Atmospheric Measurement Techniques, 2019, 12, 987-1011.	3.1	2
102	Optimization of Aerosol Model Selection for TROPOMI/S5P. Remote Sensing, 2021, 13, 2489.	4.0	2
103	Global Monitoring of Volcanic SO2 Degassing Using Sentinel-5 Precursor Tropomi. , 2021, , .		2
104	An Overview of Neural Network Methods for Predicting Uncertainty in Atmospheric Remote Sensing. Remote Sensing, 2021, 13, 5061.	4.0	2
105	Spectral surface albedo derived from GOME-2/Metop measurements. Proceedings of SPIE, 2009, , .	0.8	1
106	Constrained regularization methods for ozone profile retrieval from UV/VIS nadir spectrometers. Journal of Quantitative Spectroscopy and Radiative Transfer, 2010, 111, 907-916.	2.3	1
107	Influence of turbidity and clouds on satellite total ozone data over Madrid (Spain). Annales Geophysicae, 2010, 28, 1441-1448.	1.6	1
108	Aerosol Retrievals from DSCOVR Measurements. , 2018, , .		1

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109	The Global Ozone Monitoring Experiment: review of in-flight performance and new reprocessed 1995â€“2011 level 1 product. Atmospheric Measurement Techniques, 2018, 11, 5237-5259.	3.1	1
110	Three-Dimensional Distribution of Biomass Burning Aerosols from Australian Wildfires Observed by TROPOMI Satellite Observations. Remote Sensing, 2022, 14, 2582.	4.0	1
111	Evaluation of Water Vapor Product from TROPOMI and GOME-2 Satellites against Ground-Based GNSS Data over Europe. Atmosphere, 2022, 13, 1079.	2.3	1
112	<title>Ground segment for ERS-2 GOME sensor at the German D-PAF</title>. , 1996, , .		0
113	<title>GOME data processor: the first operational DOAS-based algorithm applied to data from a spaceborne sensor</title>. , 1997, , .		0
114	Climatology databases using neural networks: Application to global temperature profiles. , 2008, , .		0
115	Introduction to the Issue on Fostering Applications of Earth Observations of the Atmosphere. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2009, 2, 142-143.	4.9	0
116	Introduction to the Issue on Fostering Applications of Earth Observations of the Atmosphereâ€”Part II. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2009, 2, 270-270.	4.9	0
117	Validation of Atmospheric Water Vapor from Several Satellite Instruments Using GPS Measurements at Spanish Stations Under Cloud-Free Conditions. , 2018, , .		0
118	Operational Monitoring of the Antarctic Ozone Hole: Transition from GOME and SCIAMACHY to GOME-2. , 2009, , 213-236.		0
119	FULL-PHYSICS INVERSE LEARNING MACHINE FOR SATELLITE REMOTE SENSING OF OZONE PROFILE SHAPES AND TROPOSPHERIC COLUMNS. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences - ISPRS Archives, 0, XLII-3, 1995-1998.	0.2	0