FrÃ©dÃ©ric Chevallier

List of Publications by Year
in descending order

237 papers	35,555 citations	11651 70 h-index	3915 177 g-index
385 all docs	385 docs citations	385 times ranked	30438 citing authors

#	Article	IF	Citations
1	The ERAâ€40 reâ€analysis. Quarterly Journal of the Royal Meteorological Society, 2005, 131, 2961-3012.	2.7	6,198
2	Europe-wide reduction in primary productivity caused by the heat and drought in 2003. Nature, 2005, 437, 529-533.	27.8	3,245
3	Three decades of global methane sources and sinks. Nature Geoscience, 2013, 6, 813-823.	12.9	1,649
4	Global Carbon Budget 2020. Earth System Science Data, 2020, 12, 3269-3340.	9.9	1,477
5	Global Carbon Budget 2018. Earth System Science Data, 2018, 10, 2141-2194.	9.9	1,167
6	Global Carbon Budget 2019. Earth System Science Data, 2019, 11, 1783-1838.	9.9	1,159
7	Contribution of semi-arid ecosystems to interannual variability of the global carbon cycle. Nature, 2014, 509, 600-603.	27.8	1,054
8	Global Carbon Budget 2016. Earth System Science Data, 2016, 8, 605-649.	9.9	905
9	Global Carbon Budget 2017. Earth System Science Data, 2018, 10, 405-448.	9.9	801
10	Global Carbon Budget 2021. Earth System Science Data, 2022, 14, 1917-2005.	9.9	663
11	Global Carbon Budget 2015. Earth System Science Data, 2015, 7, 349-396.	9.9	616
12	Recent trends and drivers of regional sources and sinks of carbon dioxide. Biogeosciences, 2015, 12, 653-679.	3.3	587
13	Asymmetric effects of daytime and night-time warming on Northern Hemisphere vegetation. Nature, 2013, 501, 88-92.	27.8	482
14	Global carbon budget 2014. Earth System Science Data, 2015, 7, 47-85.	9.9	463
15	Near-real-time monitoring of global CO2 emissions reveals the effects of the COVID-19 pandemic. Nature Communications, 2020, 11, 5172.	12.8	420
16	Global atmospheric carbon budget: results from an ensemble of atmospheric CO₂ inversions. Biogeosciences, 2013, 10, 6699-6720.	3.3	356
17	Scaling carbon fluxes from eddy covariance sites to globe: synthesis and evaluation of the FLUXCOM approach. Biogeosciences, 2020, 17, 1343-1365.	3.3	323
18	Contribution of the Orbiting Carbon Observatory to the estimation of CO2sources and sinks: Theoretical study in a variational data assimilation framework. Journal of Geophysical Research, 2007, 112, .	3.3	301

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19	CO₂ surface fluxes at grid point scale estimated from a global 21 year reanalysis of atmospheric measurements. Journal of Geophysical Research, 2010, 115, .	3.3	276
20	Remote sensing of the terrestrial carbon cycle: A review of advances over 50 years. Remote Sensing of Environment, 2019, 233, 111383.	11.0	276
21	Inferring CO2sources and sinks from satellite observations: Method and application to TOVS data. Journal of Geophysical Research, 2005, 110, .	3.3	269
22	A Neural Network Approach for a Fast and Accurate Computation of a Longwave Radiative Budget. Journal of Applied Meteorology and Climatology, 1998, 37, 1385-1397.	1.7	258
23	TOWARD A MONITORING AND FORECASTING SYSTEM FOR ATMOSPHERIC COMPOSITION. Bulletin of the American Meteorological Society, 2008, 89, 1147-1164.	3.3	253
24	Source attribution of the changes in atmospheric methane for 2006â€“2008. Atmospheric Chemistry and Physics, 2011, 11, 3689-3700.	4.9	252
25	Current systematic carbon-cycle observations and the need for implementing a policy-relevant carbon observing system. Biogeosciences, 2014, 11, 3547-3602.	3.3	189
26	Improved retrievals of carbon dioxide from Orbiting Carbon Observatory-2 with the version 8 ACOS algorithm. Atmospheric Measurement Techniques, 2018, 11, 6539-6576.	3.1	188
27	Weakening temperature control on the interannual variations of spring carbon uptake across northern lands. Nature Climate Change, 2017, 7, 359-363.	18.8	183
28	An attempt at estimating Paris area CO₂ emissions from atmospheric concentration measurements. Atmospheric Chemistry and Physics, 2015, 15, 1707-1724.	4.9	169
29	An improved general fast radiative transfer model for the assimilation of radiance observations. Quarterly Journal of the Royal Meteorological Society, 2004, 130, 153-173.	2.7	166
30	Injection height of biomass burning aerosols as seen from a spaceborne lidar. Geophysical Research Letters, 2007, 34, .	4.0	166
31	Global trends in carbon sinks and their relationships with CO2 and temperature. Nature Climate Change, 2019, 9, 73-79.	18.8	163
32	A full greenhouse gases budget of Africa: synthesis, uncertainties, and vulnerabilities. Biogeosciences, 2014, 11, 381-407.	3.3	162
33	Assimilation and Modeling of the Atmospheric Hydrological Cycle in the ECMWF Forecasting System. Bulletin of the American Meteorological Society, 2005, 86, 387-402.	3.3	143
34	Satellite-based estimates of decline and rebound in Chinaâ€™s CO ₂ emissions during COVID-19 pandemic. Science Advances, 2020, 6, .	10.3	136
35	An assessment of the Atlantic and Arctic seaâ€“air CO₂ fluxes, 1990â€“2009. Biogeosciences, 2013, 10, 607-627.	3.3	131
36	Toward robust and consistent regional CO₂ flux estimates from in situ and spaceborne measurements of atmospheric CO₂. Geophysical Research Letters, 2014, 41, 1065-1070.	4.0	126

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37	Five decades of northern land carbon uptake revealed by the interhemispheric CO2 gradient. Nature, 2019, 568, 221-225.	27.8	124
38	Carbon Monitor, a near-real-time daily dataset of global CO2 emission from fossil fuel and cement production. Scientific Data, 2020, 7, 392.	5.3	115
39	Atmospheric inversions for estimating CO2 fluxes: methods and perspectives. Climatic Change, 2010, 103, 69-92.	3.6	113
40	The 2015â€“2016 carbon cycle as seen from OCO-2 and the global in situ network. Atmospheric Chemistry and Physics, 2019, 19, 9797-9831.	4.9	113
41	Evaluation of various observing systems for the global monitoring of CO₂ surface fluxes. Atmospheric Chemistry and Physics, 2010, 10, 10503-10520.	4.9	112
42	The Greenhouse Gas Climate Change Initiative (GHG-CCI): Comparison and quality assessment of near-surface-sensitive satellite-derived CO2 and CH4 global data sets. Remote Sensing of Environment, 2015, 162, 344-362.	11.0	112
43	Fourâ€dimensional data assimilation of atmospheric CO₂ using AIRS observations. Journal of Geophysical Research, 2009, 114, .	3.3	110
44	Multi-species inversion of CH₄, CO and H₂ emissions from surface measurements. Atmospheric Chemistry and Physics, 2009, 9, 5281-5297.	4.9	109
45	An intercomparison of inverse models for estimating sources and sinks of CO₂ using GOSAT measurements. Journal of Geophysical Research D: Atmospheres, 2015, 120, 5253-5266.	3.3	105
46	Radiance and Jacobian intercomparison of radiative transfer models applied to HIRS and AMSU channels. Journal of Geophysical Research, 2001, 106, 24017-24031.	3.3	104
47	Multiple-scattering microwave radiative transfer for data assimilation applications. Quarterly Journal of the Royal Meteorological Society, 2006, 132, 1259-1281.	2.7	104
48	The carbon budget of terrestrial ecosystems in East Asia over the last two decades. Biogeosciences, 2012, 9, 3571-3586.	3.3	103
49	The importance of transport model uncertainties for the estimation of CO₂ sources and sinks using satellite measurements. Atmospheric Chemistry and Physics, 2010, 10, 9981-9992.	4.9	98
50	Global atmospheric carbon monoxide budget 2000â€“2017 inferred from multi-species atmospheric inversions. Earth System Science Data, 2019, 11, 1411-1436.	9.9	96
51	Rapid decline in carbon monoxide emissions and export from East Asia between years 2005 and 2016. Environmental Research Letters, 2018, 13, 044007.	5.2	95
52	Satellite and In Situ Observations for Advancing Global Earth Surface Modelling: A Review. Remote Sensing, 2018, 10, 2038.	4.0	95
53	Quantifying the Impact of Atmospheric Transport Uncertainty on CO₂ Surface Flux Estimates. Global Biogeochemical Cycles, 2019, 33, 484-500.	4.9	95
54	Constraining a global ecosystem model with multi-site eddy-covariance data. Biogeosciences, 2012, 9, 3757-3776.	3.3	94

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55	The formaldehyde budget as seen by a global-scale multi-constraint and multi-species inversion system. Atmospheric Chemistry and Physics, 2012, 12, 6699-6721.	4.9	93
56	Topâ€“down assessment of the Asian carbon budget since the mid 1990s. Nature Communications, 2016, 7, 10724.	12.8	93
57	Estimating aerosol emissions by assimilating observed aerosol optical depth in a global aerosol model. Atmospheric Chemistry and Physics, 2012, 12, 4585-4606.	4.9	92
58	Assimilation of global MODIS leaf area index retrievals within a terrestrial biosphere model. Geophysical Research Letters, 2007, 34, .	4.0	91
59	Mesoscale inversion: first results from the CERES campaign with synthetic data. Atmospheric Chemistry and Physics, 2008, 8, 3459-3471.	4.9	91
60	On the consistency between global and regional methane emissions inferred from SCIAMACHY, TANSO-FTS, IASI and surface measurements. Atmospheric Chemistry and Physics, 2014, 14, 577-592.	4.9	91
61	Use of a neural-network-based long-wave radiative-transfer scheme in the ECMWF atmospheric model. Quarterly Journal of the Royal Meteorological Society, 2000, 126, 761-776.	2.7	90
62	MERLIN: A French-German Space Lidar Mission Dedicated to Atmospheric Methane. Remote Sensing, 2017, 9, 1052.	4.0	88
63	Ten years of CO emissions as seen from Measurements of Pollution in the Troposphere (MOPITT). Journal of Geophysical Research, 2011, 116, .	3.3	87
64	The first 1-year-long estimate of the Paris region fossil fuel CO₂ emissions based on atmospheric inversion. Atmospheric Chemistry and Physics, 2016, 16, 14703-14726.	4.9	87
65	Characteristics of the TOVS Pathfinder Path-B Dataset. Bulletin of the American Meteorological Society, 1999, 80, 2679-2701.	3.3	86
66	On the assignment of prior errors in Bayesian inversions of CO2surface fluxes. Geophysical Research Letters, 2006, 33, .	4.0	86
67	Global CO₂fluxes inferred from surface air-sample measurements and from TCCON retrievals of the CO₂total column. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	85
68	The contribution of AIRS data to the estimation of CO2sources and sinks. Geophysical Research Letters, 2005, 32, .	4.0	84
69	Drought rapidly diminishes the large net CO2 uptake in 2011 over semi-arid Australia. Scientific Reports, 2016, 6, 37747.	3.3	83
70	Structure of the transport uncertainty in mesoscale inversions of CO₂ sources and sinks using ensemble model simulations. Biogeosciences, 2009, 6, 1089-1102.	3.3	82
71	Net carbon emissions from African biosphere dominate pan-tropical atmospheric CO2 signal. Nature Communications, 2019, 10, 3344.	12.8	81
72	On the accuracy of the CO₂ surface fluxes to be estimated from the GOSAT observations. Geophysical Research Letters, 2009, 36, .	4.0	80

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73	Consistent evaluation of ACOS-GOSAT, BESD-SCIAMACHY, CarbonTracker, and MACC through comparisons to TCCON. Atmospheric Measurement Techniques, 2016, 9, 683-709.	3.1	80
74	State of the Climate in 2014. Bulletin of the American Meteorological Society, 2015, 96, ES1-ES32.	3.3	78
75	Global atmospheric CO₂ inverse models converging on neutral tropical land exchange, but disagreeing on fossil fuel and atmospheric growth rate. Biogeosciences, 2019, 16, 117-134.	3.3	77
76	TIGR-like atmospheric-profile databases for accurate radiative-flux computation. Quarterly Journal of the Royal Meteorological Society, 2000, 126, 777-785.	2.7	75
77	Global inverse modeling of CH₄ sources and sinks: an overview of methods. Atmospheric Chemistry and Physics, 2017, 17, 235-256.	4.9	75
78	Forecasting global atmospheric CO₂. Atmospheric Chemistry and Physics, 2014, 14, 11959-11983.	4.9	74
79	European land CO2 sink influenced by NAO and East-Atlantic Pattern coupling. Nature Communications, 2016, 7, 10315.	12.8	74
80	Can we reconcile atmospheric estimates of the Northern terrestrial carbon sink with land-based accounting?. Current Opinion in Environmental Sustainability, 2010, 2, 225-230.	6.3	73
81	Some neural network applications in environmental sciences. Part II: advancing computational efficiency of environmental numerical models. Neural Networks, 2003, 16, 335-348.	5.9	72
82	Impact of correlated observation errors on inverted CO₂ surface fluxes from OCO measurements. Geophysical Research Letters, 2007, 34, .	4.0	72
83	On the impact of transport model errors for the estimation of CO₂ surface fluxes from GOSAT observations. Geophysical Research Letters, 2010, 37, .	4.0	72
84	Increasing forest fire emissions despite the decline in global burned area. Science Advances, 2021, 7, eabh2646.	10.3	71
85	The impact of transport model differences on CO₂ surface flux estimates from OCO-2 retrievals of column average CO₂. Atmospheric Chemistry and Physics, 2018, 18, 7189-7215.	4.9	70
86	Decadal trends in global CO emissions as seen by MOPITT. Atmospheric Chemistry and Physics, 2015, 15, 13433-13451.	4.9	69
87	Atmospheric constraints on the methane emissions from the East Siberian Shelf. Atmospheric Chemistry and Physics, 2016, 16, 4147-4157.	4.9	69
88	Impact of transport model errors on the global and regional methane emissions estimated by inverse modelling. Atmospheric Chemistry and Physics, 2013, 13, 9917-9937.	4.9	68
89	A new stepwise carbon cycle data assimilation system using multiple data streams to constrain the simulated land surface carbon cycle. Geoscientific Model Development, 2016, 9, 3321-3346.	3.6	67
90	The size of the land carbon sink in China. Nature, 2022, 603, E7-E9.	27.8	67

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91	Estimation of global black carbon direct radiative forcing and its uncertainty constrained by observations. Journal of Geophysical Research D: Atmospheres, 2016, 121, 5948-5971.	3.3	66
92	Assimilation of POLDER aerosol optical thickness into the LMDz-INCA model: Implications for the Arctic aerosol burden. Journal of Geophysical Research, 2007, 112, .	3.3	64
93	Assessing 5 years of GOSAT Proxy XCH₄ data and associated uncertainties. Atmospheric Measurement Techniques, 2015, 8, 4785-4801.	3.1	64
94	Observing carbon dioxide emissions over China's cities and industrial areas with the Orbiting Carbon Observatory-2. Atmospheric Chemistry and Physics, 2020, 20, 8501-8510.	4.9	64
95	Estimating atmospheric CO2from advanced infrared satellite radiances within an operational 4D-Var data assimilation system: Methodology and first results. Journal of Geophysical Research, 2004, 109, .	3.3	63
96	Does GOSAT capture the true seasonal cycle of carbon dioxide?. Atmospheric Chemistry and Physics, 2015, 15, 13023-13040.	4.9	63
97	Impact of the 2015/2016 El NiÃ±o on the terrestrial carbon cycle constrained by bottom-up and top-down approaches. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20170304.	4.0	63
98	Atmospheric deposition, CO2, and change in the land carbon sink. Scientific Reports, 2017, 7, 9632.	3.3	62
99	Regional inversion of CO₂ ecosystem fluxes from atmospheric measurements: reliability of the uncertainty estimates. Atmospheric Chemistry and Physics, 2013, 13, 9039-9056.	4.9	60
100	Variability of fire carbon emissions in equatorial Asia and its nonlinear sensitivity to El NiÃ±o. Geophysical Research Letters, 2016, 43, 10,472.	4.0	60
101	Nitrous oxide emissions 1999 to 2009 from a global atmospheric inversion. Atmospheric Chemistry and Physics, 2014, 14, 1801-1817.	4.9	59
102	Objective evaluation of surface- and satellite-driven carbon dioxide atmospheric inversions. Atmospheric Chemistry and Physics, 2019, 19, 14233-14251.	4.9	59
103	Sources of Uncertainty in Regional and Global Terrestrial CO₂ Exchange Estimates. Global Biogeochemical Cycles, 2020, 34, e2019GB006393.	4.9	59
104	Comparing national greenhouse gas budgets reported in UNFCCC inventories against atmospheric inversions. Earth System Science Data, 2022, 14, 1639-1675.	9.9	58
105	The capability of 4D-Var systems to assimilate cloud-affected satellite infrared radiances. Quarterly Journal of the Royal Meteorological Society, 2004, 130, 917-932.	2.7	57
106	A European summertime CO2biogenic flux inversion at mesoscale from continuous in situ mixing ratio measurements. Journal of Geophysical Research, 2011, 116, n/a-n/a.	3.3	57
107	Optimal representation of source-sink fluxes for mesoscale carbon dioxide inversion with synthetic data. Journal of Geophysical Research, 2011, 116, .	3.3	56
108	Gridded fossil CO2 emissions and related O2 combustion consistent with national inventories 1959â€"2018. Scientific Data, 2021, 8, 2.	5.3	56

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109	African CO emissions between years 2000 and 2006 as estimated from MOPITT observations. Biogeosciences, 2009, 6, 103-111.	3.3	54
110	Consistent assimilation of multiple data streams in a carbon cycle data assimilation system. Geoscientific Model Development, 2016, 9, 3569-3588.	3.6	54
111	Model Clouds as Seen from Space: Comparison with Geostationary Imagery in the 11-Î¼m Window Channel. Monthly Weather Review, 2002, 130, 712-722.	1.4	53
112	The European land and inland water CO₂, CO, CH₄ and N₂O balance between 2001 and 2005. Biogeosciences, 2012, 9, 3357-3380.	3.3	53
113	A decade of GOSAT Proxy satellite CH₄ observations. Earth System Science Data, 2020, 12, 3383-3412.	9.9	53
114	AIRSâ€based versus flaskâ€based estimation of carbon surface fluxes. Journal of Geophysical Research, 2009, 114, .	3.3	52
115	Assimilation of atmospheric methane products into the MACC-II system: from SCIAMACHY to TANSO and IASI. Atmospheric Chemistry and Physics, 2014, 14, 6139-6158.	4.9	52
116	Global satellite observations of column-averaged carbon dioxide and methane: The GHG-CCI XCO2 and XCH4 CRDP3 data set. Remote Sensing of Environment, 2017, 203, 276-295.	11.0	52
117	Variational retrieval of temperature and humidity profiles using rain rates versus microwave brightness temperatures. Quarterly Journal of the Royal Meteorological Society, 2004, 130, 827-852.	2.7	49
118	TransCom N₂O model inter-comparison â€" Part 2: Atmospheric inversion estimates of N₂O emissions. Atmospheric Chemistry and Physics, 2014, 14, 6177-6194.	4.9	49
119	Modelling CO₂ weather â€" why horizontal resolution matters. Atmospheric Chemistry and Physics, 2019, 19, 7347-7376.	4.9	49
120	On the statistical optimality of CO₂ atmospheric inversions assimilating CO₂ column retrievals. Atmospheric Chemistry and Physics, 2015, 15, 11133-11145.	4.9	48
121	Benchmarking the seasonal cycle of CO₂ fluxes simulated by terrestrial ecosystem models. Global Biogeochemical Cycles, 2015, 29, 46-64.	4.9	48
122	On the causes of trends in the seasonal amplitude of atmospheric <scp>CO</scp>₂. Global Change Biology, 2018, 24, 608-616.	9.5	48
123	A seamless ensemble-based reconstruction of surface ocean <i>p</i>CO₂ and airâ€"sea CO₂ fluxes over the global coastal and open oceans. Biogeosciences, 2022, 19, 1087-1109.	3.3	48
124	What eddyâ€covariance measurements tell us about prior land flux errors in CO₂â€flux inversion schemes. Global Biogeochemical Cycles, 2012, 26, .	4.9	47
125	Atmospheric measurements of ratios between CO₂ and co-emitted species from traffic: a tunnel study in the Paris megacity. Atmospheric Chemistry and Physics, 2014, 14, 12871-12882.	4.9	47
126	Copernicus Marine Service Ocean State Report, Issue 4. Journal of Operational Oceanography, 2020, 13, S1-S172.	1.2	47

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127	Model Clouds over Oceans as Seen from Space: Comparison with HIRS/2 and MSU Radiances. Journal of Climate, 2001, 14, 4216-4229.	3.2	46
128	Bridging the gap between atmospheric concentrations and local ecosystem measurements. Geophysical Research Letters, 2009, 36, .	4.0	46
129	AMSU-A Land Surface Emissivity Estimation for Numerical Weather Prediction Assimilation Schemes. Journal of Applied Meteorology and Climatology, 2005, 44, 416-426.	1.7	45
130	Sensitivity of the recent methane budget to LMDz sub-grid-scale physical parameterizations. Atmospheric Chemistry and Physics, 2015, 15, 9765-9780.	4.9	45
131	What would dense atmospheric observation networks bring to the quantification of city CO₂ emissions?. Atmospheric Chemistry and Physics, 2016, 16, 7743-7771.	4.9	45
132	The potential of satellite spectro-imagery for monitoring CO₂ emissions from large cities. Atmospheric Measurement Techniques, 2018, 11, 681-708.	3.1	45
133	Age of air as a diagnostic for transport timescales in global models. Geoscientific Model Development, 2018, 11, 3109-3130.	3.6	44
134	Improving Estimates of Gross Primary Productivity by Assimilating Solarâ€Induced Fluorescence Satellite Retrievals in a Terrestrial Biosphere Model Using a Processâ€Based SIF Model. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 3281-3306.	3.0	44
135	Strong Southern Ocean carbon uptake evident in airborne observations. Science, 2021, 374, 1275-1280.	12.6	44
136	Four years of global carbon cycle observed from the Orbiting Carbon Observatory 2 (OCO-2) versionÂ9 and in situ data and comparison to OCO-2 versionÂ7. Atmospheric Chemistry and Physics, 2022, 22, 1097-1130.	4.9	44
137	What can we learn from European continuous atmospheric CO₂ measurements to quantify regional fluxes â€" Part 2: Sensitivity of flux accuracy to inverse setup. Atmospheric Chemistry and Physics, 2010, 10, 3119-3129.	4.9	43
138	Modelâ€"data fusion across ecosystems: from multisite optimizations to global simulations. Geoscientific Model Development, 2014, 7, 2581-2597.	3.6	43
139	State of the science in reconciling topâ€down and bottomâ€up approaches for terrestrial CO₂ budget. Global Change Biology, 2020, 26, 1068-1084.	9.5	43
140	On the capability of IASI measurements to inform about CO surface emissions. Atmospheric Chemistry and Physics, 2009, 9, 8735-8743.	4.9	42
141	Bayesian design of control space for optimal assimilation of observations. Part I: Consistent multiscale formalism. Quarterly Journal of the Royal Meteorological Society, 2011, 137, 1340-1356.	2.7	42
142	Evaluation of a Global Vegetation Model using time series of satellite vegetation indices. Geoscientific Model Development, 2011, 4, 1103-1114.	3.6	42
143	Linearized radiation and cloud schemes in the ECMWF model: Development and evaluation. Quarterly Journal of the Royal Meteorological Society, 2002, 128, 1505-1527.	2.7	42
144	Atmospheric inversions for estimating CO2 fluxes: methods and perspectives. , 2010, , 69-92.		41

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145	A recent build-up of atmospheric CO₂ over Europe. Part 1: observed signals and possible explanations. Tellus, Series B: Chemical and Physical Meteorology, 2022, 62, 1.	1.6	40
146	Diurnal, synoptic and seasonal variability of atmospheric CO₂ in the Paris megacity area. Atmospheric Chemistry and Physics, 2018, 18, 3335-3362.	4.9	40
147	Comparing CO2retrieved from Atmospheric Infrared Sounder with model predictions: Implications for constraining surface fluxes and lower-to-upper troposphere transport. Journal of Geophysical Research, 2006, 111, .	3.3	39
148	Quantifying the model structural error in carbon cycle data assimilation systems. Geoscientific Model Development, 2013, 6, 45-55.	3.6	38
149	Ability of the 4-D-Var analysis of the GOSAT BESD XCO₂ retrievals to characterize atmospheric CO₂ at large and synoptic scales. Atmospheric Chemistry and Physics, 2016, 16, 1653-1671.	4.9	38
150	Towards better error statistics for atmospheric inversions of methane surface fluxes. Atmospheric Chemistry and Physics, 2013, 13, 7115-7132.	4.9	37
151	Tropical land carbon cycle responses to 2015/16 El NiÃ±o as recorded by atmospheric greenhouse gas and remote sensing data. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20170302.	4.0	37
152	A Parameterization of the Microwave Land Surface Emissivity Between 19 and 100 GHz, Anchored to Satellite-Derived Estimates. IEEE Transactions on Geoscience and Remote Sensing, 2008, 46, 344-352.	6.3	36
153	XCO₂ in an emission hot-spot region: the COCCON Paris campaign 2015. Atmospheric Chemistry and Physics, 2019, 19, 3271-3285.	4.9	35
154	Model Rain and Clouds over Oceans: Comparison with SSM/I Observations. Monthly Weather Review, 2003, 131, 1240-1255.	1.4	35
155	Joint assimilation of eddy covariance flux measurements and FAPAR products over temperate forests within a processâ€oriented biosphere model. Journal of Geophysical Research G: Biogeosciences, 2015, 120, 1839-1857.	3.0	34
156	Definitions and methods to estimate regional land carbon fluxes for the second phase of the REgional Carbon Cycle Assessment and Processes Project (RECCAP-2). Geoscientific Model Development, 2022, 15, 1289-1316.	3.6	34
157	How Much CO2 Is Taken Up by the European Terrestrial Biosphere?. Bulletin of the American Meteorological Society, 2017, 98, 665-671.	3.3	33
158	Development of a variational flux inversion system (INVICAT v1.0) using the TOMCAT chemical transport model. Geoscientific Model Development, 2014, 7, 2485-2500.	3.6	32
159	Inverse modeling of GOSAT-retrieved ratios of total column CH₄ and CO₂ for 2009 and 2010. Atmospheric Chemistry and Physics, 2016, 16, 5043-5062.	4.9	32
160	Natural and anthropogenic methane fluxes in Eurasia: a mesoscale quantification by generalized atmospheric inversion. Biogeosciences, 2015, 12, 5393-5414.	3.3	31
161	On the impact of recent developments of the LMDz atmospheric general circulation model on the simulation of CO₂ transport. Geoscientific Model Development, 2018, 11, 4489-4513.	3.6	31
162	Fundamentals of data assimilation applied to biogeochemistry. Atmospheric Chemistry and Physics, 2019, 19, 13911-13932.	4.9	31

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163	Local Anomalies in the Columnâ€Averaged Dry Air Mole Fractions of Carbon Dioxide Across the Globe During the First Months of the Coronavirus Recession. Geophysical Research Letters, 2020, 47, e2020GL090244.	4.0	31
164	Variational retrieval of cloud profile from ATOVS observations. Quarterly Journal of the Royal Meteorological Society, 2002, 128, 2511-2525.	2.7	30
165	Evaluating the potential of large-scale simulations to predict carbon fluxes of terrestrial ecosystems over a European Eddy Covariance network. Biogeosciences, 2014, 11, 2661-2678.	3.3	30
166	Analysis of the potential of near-ground measurements of CO₂ and CH₄ in London, UK, for the monitoring of city-scale emissions using an atmospheric transport model. Atmospheric Chemistry and Physics, 2016, 16, 6735-6756.	4.9	30
167	Benchmarking carbon fluxes of the ISIMIP2a biome models. Environmental Research Letters, 2017, 12, 045002.	5.2	30
168	Contrasting effects of CO₂ fertilization, land-use change and warming on seasonal amplitude of Northern Hemisphere CO₂ exchange. Atmospheric Chemistry and Physics, 2019, 19, 12361-12375.	4.9	30
169	Evaluation of the Jacobians of Infrared Radiation Models for Variational Data Assimilation. Journal of Applied Meteorology and Climatology, 2001, 40, 1445-1461.	1.7	29
170	A new estimation of the recent tropospheric molecular hydrogen budget using atmospheric observations and variational inversion. Atmospheric Chemistry and Physics, 2011, 11, 3375-3392.	4.9	29
171	Atmospheric inversion of SO₂ and primary aerosol emissions for the year 2010. Atmospheric Chemistry and Physics, 2013, 13, 6555-6573.	4.9	29
172	Land use change and El NiÃ±o-Southern Oscillation drive decadal carbon balance shifts in Southeast Asia. Nature Communications, 2018, 9, 1154.	12.8	28
173	Variational retrieval of rain profiles from spaceborne passive microwave radiance observations. Journal of Geophysical Research, 2003, 108, .	3.3	27
174	A biogenic CO₂ flux adjustment scheme for the mitigation of large-scale biases in global atmospheric CO₂ analyses and forecasts. Atmospheric Chemistry and Physics, 2016, 16, 10399-10418.	4.9	27
175	Siberian and temperate ecosystems shape Northern Hemisphere atmospheric CO ₂ seasonal amplification. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 21079-21087.	7.1	27
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