Pieter P Tans

List of Publications by Citations

296 papers	29,486 citations	89 h-index	167 g-index
313 ext. papers	33,570 ext. citations	9.8 avg, IF	6.56 L-index

#	Paper	IF	Citations
296	Observational contrains on the global atmospheric co2 budget. *Science*, **1990**, 247, 1431-8	33.3	1758
295	Global Carbon Budget 2018. *Earth System Science Data*, **2018**, 10, 2141-2194	10.5	831
294	Global Carbon Budget 2019. *Earth System Science Data*, **2019**, 11, 1783-1838	10.5	776
293	An atmospheric perspective on North American carbon dioxide exchange: CarbonTracker. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 18925-30	11.5	737
292	Global Carbon Budget 2016. *Earth System Science Data*, **2016**, 8, 605-649	10.5	730
291	A Large Northern Hemisphere Terrestrial CO2 Sink Indicated by the 13C/12C Ratio of Atmospheric CO2. *Science*, **1995**, 269, 1098-102	33.3	685
290	Weak northern and strong tropical land carbon uptake from vertical profiles of atmospheric CO2. *Science*, **2007**, 316, 1732-5	33.3	663
289	Global Carbon Budget 2017. *Earth System Science Data*, **2018**, 10, 405-448	10.5	614
288	Regional changes in carbon dioxide fluxes of land and oceans since 1980. *Science*, **2000**, 290, 1342-7	33.3	612
287	Evidence for interannual variability of the carbon cycle from the National Oceanic and Atmospheric Administration/Climate Monitoring and Diagnostics Laboratory Global Air Sampling Network. *Journal of Geophysical Research*, **1994**, 99, 22831		602
286	A large terrestrial carbon sink in north america implied by atmospheric and oceanic carbon dioxide data and models. *Science*, **1998**, 282, 442-6	33.3	593
285	Atmospheric carbon dioxide at Mauna Loa Observatory: 2. Analysis of the NOAA GMCC data, 1974–1985. *Journal of Geophysical Research*, **1989**, 94, 8549-8565		569
284	Energy and environment. Methane leaks from North American natural gas systems. *Science*, **2014**, 343, 733-5	33.3	552
283	Global Carbon Budget 2020. *Earth System Science Data*, **2020**, 12, 3269-3340	10.5	533
282	Global Carbon Budget 2015. *Earth System Science Data*, **2015**, 7, 349-396	10.5	513
281	Increase in observed net carbon dioxide uptake by land and oceans during the past 50 years. *Nature* , **2012**, 488, 70-2	50.4	422
280	Global carbon sinks and their variability inferred from atmospheric O2 and delta13C. *Science*, **2000**, 287, 2467-70	33.3	420

279	Changes in oceanic and terrestrial carbon uptake since 1982. *Nature*, **1995**, 373, 326-330	50.4	413
278	Global carbon budget 2014. *Earth System Science Data*, **2015**, 7, 47-85	10.5	367
277	Methane emissions estimate from airborne measurements over a western United States natural gas field. *Geophysical Research Letters*, **2013**, 40, 4393-4397	4.9	345
276	Continuing decline in the growth rate of the atmospheric methane burden. *Nature*, **1998**, 393, 447-450	50.4	340
275	Atmospheric methane levels off: Temporary pause or a new steady-state?. *Geophysical Research Letters*, **2003**, 30,	4.9	330
274	Hydrocarbon emissions characterization in the Colorado Front Range: A pilot study. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		302
273	Recent trends in the 13C/12C ratio of atmospheric carbon dioxide. *Nature*, **1979**, 277, 121-123	50.4	302
272	Upward revision of global fossil fuel methane emissions based on isotope database. *Nature*, **2016**, 538, 88-91	50.4	301
271	Partitioning of ocean and land uptake of CO2 as inferred by δ13C measurements from the NOAA Climate Monitoring and Diagnostics Laboratory Global Air Sampling Network. *Journal of Geophysical Research*, **1995**, 100, 5051		287
270	Extension and integration of atmospheric carbon dioxide data into a globally consistent measurement record. *Journal of Geophysical Research*, **1995**, 100, 11593		283
269	Enhanced seasonal exchange of CO2 by northern ecosystems since 1960. *Science*, **2013**, 341, 1085-9	33.3	274
268	Slowing down of the global accumulation of atmospheric methane during the 1980s. *Nature*, **1992**, 358, 313-316	50.4	271
267	Precision requirements for space-based data. *Journal of Geophysical Research*, **2007**, 112,		269
266	Global carbon budget 2013. *Earth System Science Data*, **2014**, 6, 235-263	10.5	264
265	Atmospheric gas concentrations over the past century measured in air from firn at the South Pole. *Nature*, **1996**, 383, 231-235	50.4	257
264	Influence of El Niño on the equatorial Pacific contribution to atmospheric CO2 accumulation. *Nature*, **1999**, 398, 597-601	50.4	241
263	Oceanic 13C/12C observations: A new window on ocean CO2 uptake. *Global Biogeochemical Cycles*, **1993**, 7, 353-368	5.9	216
262	Mixing ratios of carbon monoxide in the troposphere. *Journal of Geophysical Research*, **1992**, 97, 20731		208

261	Frequency-comb-based remote sensing of greenhouse gases over kilometer air paths. *Optica*, **2014**, 1, 290	8.6	192
260	A new look at methane and nonmethane hydrocarbon emissions from oil and natural gas operations in the Colorado Denver-Julesburg Basin. *Journal of Geophysical Research D: Atmospheres* , **2014**, 119, 6836-6852	4.4	191
259	Seven years of recent European net terrestrial carbon dioxide exchange constrained by atmospheric observations. *Global Change Biology*, **2010**, 16, 1317-1337	11.4	182
258	Increases in early season ecosystem uptake explain recent changes in the seasonal cycle of atmospheric CO2 at high northern latitudes. *Geophysical Research Letters*, **1999**, 26, 2765-2768	4.9	181
257	A dramatic decrease in the growth rate of atmospheric methane in the northern hemisphere during 1992. *Geophysical Research Letters*, **1994**, 21, 45-48	4.9	177
256	A three-dimensional synthesis study of δ18O in atmospheric CO2: 1. Surface fluxes. *Journal of Geophysical Research*, **1997**, 102, 5857-5872		176
255	On the global distribution, seasonality, and budget of atmospheric carbonyl sulfide (COS) and some similarities to CO2. *Journal of Geophysical Research*, **2007**, 112,		176
254	Recent changes in atmospheric carbon monoxide. *Science*, **1994**, 263, 1587-90	33.3	175
253	Latitudinal distribution of the sources and sinks of atmospheric carbon dioxide derived from surface observations and an atmospheric transport model. *Journal of Geophysical Research*, **1989**, 94, 5151		172
252	Latitudinal variation in oxygen-18 of atmospheric CO2. *Nature*, **1987**, 327, 495-497	50.4	172
251	Monitoring the isotopic composition of atmospheric CO2: Measurements from the NOAA Global Air Sampling Network. *Journal of Geophysical Research*, **1996**, 101, 25897-25916		165
250	Partitioning net ecosystem carbon exchange with isotopic fluxes of CO2. *Global Change Biology*, **2001**, 7, 127-145	11.4	164
249	What atmospheric oxygen measurements can tell us about the global carbon cycle. *Global Biogeochemical Cycles*, **1993**, 7, 37-67	5.9	164
248	Comparison of 14CO2, CO, and SF6 as tracers for recently added fossil fuel CO2 in the atmosphere and implications for biological CO2 exchange. *Geophysical Research Letters*, **2006**, 33, n/a-n/a	4.9	161
247	CO₂, CO, and CH₄ measurements from tall towers in the NOAA Earth System Research Laboratory's Global Greenhouse Gas Reference Network: instrumentation, uncertainty analysis, and recommendations for future high-accuracy greenhouse gas monitoring efforts. *Atmospheric Measurement Techniques*, **2014**, 7, 647-687	4	147
246	Inverse modeling estimates of the global nitrous oxide surface flux from 1998–2001. *Global Biogeochemical Cycles*, **2006**, 20, n/a-n/a	5.9	140
245	An ensemble data assimilation system to estimate CO2 surface fluxes from atmospheric trace gas observations. *Journal of Geophysical Research*, **2005**, 110,		138
244	Aircraft-Based Estimate of Total Methane Emissions from the Barnett Shale Region. *Environmental Science & Technology*, **2015**, 49, 8124-31	10.3	137

243	. *Tellus, Series B: Chemical and Physical Meteorology*, **1998**, 50, 401-415	3.3	131
242	Assessment of fossil fuel carbon dioxide and other anthropogenic trace gas emissions from airborne measurements over Sacramento, California in spring 2009. *Atmospheric Chemistry and Physics*, **2011**, 11, 705-721	6.8	130
241	New constraints on Northern Hemisphere growing season net flux. *Geophysical Research Letters*, **2007**, 34,	4.9	130
240	Natural atmospheric 14C variation and the Suess effect. *Nature*, **1979**, 280, 826-828	50.4	130
239	CarbonTracker-CH₄: an assimilation system for estimating emissions of atmospheric methane. *Atmospheric Chemistry and Physics*, **2014**, 14, 8269-8293	6.8	128
238	Estimating uncertainty of the WMO mole fraction scale for carbon dioxide in air. *Journal of Geophysical Research*, **2006**, 111,		127
237	Global carbon budget 2014		121
236	Toward quantification and source sector identification of fossil fuel CO2 emissions from an urban area: Results from the INFLUX experiment. *Journal of Geophysical Research D: Atmospheres*, **2015**, 120, 292-312	4.4	120
235	A geostatistical approach to surface flux estimation of atmospheric trace gases. *Journal of Geophysical Research*, **2004**, 109,		118
234	. *Tellus, Series B: Chemical and Physical Meteorology*, **1988**, 40B, 81-115	3.3	118
233	Calculating isotopic fractionation from atmospheric measurements at various scales		118
232	Combined Simple Biosphere/Carnegie-Ames-Stanford Approach terrestrial carbon cycle model. *Journal of Geophysical Research*, **2008**, 113,		116
231	Carbon dioxide sources from Alaska driven by increasing early winter respiration from Arctic tundra. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 5361-5366	11.5	115
230	AirCore: An Innovative Atmospheric Sampling System. *Journal of Atmospheric and Oceanic Technology*, **2010**, 27, 1839-1853	2	114
229	Climatic change in tasmania inferred from a 1089-year tree-ring chronology of huon pine. *Science*, **1991**, 253, 1266-8	33.3	113
228	Seasonal climatology of CO2 across North America from aircraft measurements in the NOAA/ESRL Global Greenhouse Gas Reference Network. *Journal of Geophysical Research D: Atmospheres*, **2015**, 120, 5155-5190	4.4	112
227	CH4 sources estimated from atmospheric observations of CH4 and its 13C/12C isotopic ratios: 1. Inverse modeling of source processes. *Global Biogeochemical Cycles*, **2004**, 18, n/a-n/a	5.9	110
226	Reversal of global atmospheric ethane and propane trends largely due to US oil and natural gas production. *Nature Geoscience*, **2016**, 9, 490-495	18.3	109

225	The role of carbon dioxide in climate forcing from 1979 to 2004: introduction of the Annual Greenhouse Gas Index. *Tellus, Series B: Chemical and Physical Meteorology*, **2006**, 58, 614-619	3.3	109
224	What is the concentration footprint of a tall tower?. *Journal of Geophysical Research*, **2001**, 106, 17831-17840		108
223	Weakening temperature control on the interannual variations of spring carbon uptake across northern lands. *Nature Climate Change*, **2017**, 7, 359-363	21.4	107
222	Accelerating net terrestrial carbon uptake during the warming hiatus due to reduced respiration. *Nature Climate Change*, **2017**, 7, 148-152	21.4	106
221	A new look at atmospheric carbon dioxide. *Atmospheric Environment*, **2009**, 43, 2084-2086	5.3	105
220	Linking emissions of fossil fuel CO2 and other anthropogenic trace gases using atmospheric 14CO2. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		104
219	Airborne measurements indicate large methane emissions from the eastern Amazon basin. *Geophysical Research Letters*, **2007**, 34,	4.9	101
218	Development of analytical methods and measurements of 13C/12C in atmospheric CH4 from the NOAA Climate Monitoring and Diagnostics Laboratory Global Air Sampling Network. *Journal of Geophysical Research*, **2002**, 107, ACH 11-1		101
217	Measurements of carbon dioxide on very tall towers: results of the NOAA/CMDL program. *Tellus, Series B: Chemical and Physical Meteorology*, **1998**, 50, 401-415	3.3	101
216	Variability in the O2/N2 ratio of southern hemisphere air, 1991□1994: Implications for the carbon cycle. *Global Biogeochemical Cycles*, **1996**, 10, 9-21	5.9	101
215	Maximum likelihood estimation of covariance parameters for Bayesian atmospheric trace gas surface flux inversions. *Journal of Geophysical Research*, **2005**, 110,		99
214	Past atmospheric CO2 levels and the 13C/12C ratios in tree rings. *Tellus*, **1980**, 32, 268-283		97
213	Compiled records of carbon isotopes in atmospheric CO₂ for historical simulations in CMIP6. *Geoscientific Model Development*, **2017**, 10, 4405-4417	6.3	96
212	Changes in CH4 and CO growth rates after the eruption of Mt. Pinatubo and their link with changes in tropical tropospheric UV flux. *Geophysical Research Letters*, **1996**, 23, 2761-2764	4.9	94
211	Determination of the isotopic(13C/12C) discrimination by terrestrial biology from a global network of observations. *Global Biogeochemical Cycles*, **1998**, 12, 555-562	5.9	90
210	Measurement of 18O/16O in the soil-atmosphere CO2 flux. *Global Biogeochemical Cycles*, **1999**, 13, 761-774	5.9	89
209	A high precision isotope ratio mass spectrometry method for measuring the ratio of air. *Geochimica Et Cosmochimica Acta*, **1994**, 58, 4751-4758	5.5	89
208	. *Tellus, Series B: Chemical and Physical Meteorology*, **1995**, 47, 535-549	3.3	86

207	Observed and simulated global distribution and budget of atmospheric C₂-C₅ alkanes. *Atmospheric Chemistry and Physics*, **2010**, 10, 4403-4422	6.8	85
206	A feasible Global Carbon Cycle Observing System: a plan to decipher today's carbon cycle based on observations. *Global Change Biology*, **1996**, 2, 309-318	11.4	84
205	Audit of the global carbon budget: estimate errors and their impact on uptake uncertainty. *Biogeosciences*, **2015**, 12, 2565-2584	4.6	82
204	Verification of flux measurement using relaxed eddy accumulation. *Atmospheric Environment Part A General Topics*, **1993**, 27, 2417-2426		81
203	NOAA/CSIRO Flask Air Intercomparison Experiment: A strategy for directly assessing consistency among atmospheric measurements made by independent laboratories. *Journal of Geophysical Research*, **2001**, 106, 20445-20464		80
202	In situ measurement of atmospheric CO₂ at the four WMO/GAW stations in China. *Atmospheric Chemistry and Physics*, **2014**, 14, 2541-2554	6.8	78
201	Five decades of northern land carbon uptake revealed by the interhemispheric CO gradient. *Nature*, **2019**, 568, 221-225	50.4	77
200	CH4 sources estimated from atmospheric observations of CH4 and its 13C/12C isotopic ratios: 2. Inverse modeling of CH4 fluxes from geographical regions. *Global Biogeochemical Cycles*, **2004**, 18, n/a-n/a	5.9	76
199	Global carbon budget 2013 **2013**,		75
198	A note on isotopic ratios and the global atmospheric methane budget. *Global Biogeochemical Cycles* , **1997**, 11, 77-81	5.9	75
197	Validation of XCO₂ derived from SWIR spectra of GOSAT TANSO-FTS with aircraft measurement data. *Atmospheric Chemistry and Physics*, **2013**, 13, 9771-9788	6.8	74
196	Elevated atmospheric CO2 effects and soil water feedbacks on soil respiration components in a Colorado grassland. *Global Biogeochemical Cycles*, **2003**, 17, n/a-n/a	5.9	73
195	Increased water-use efficiency and reduced CO uptake by plants during droughts at a continental-scale. *Nature Geoscience*, **2018**, 11, 744-748	18.3	72
194	Long-term greenhouse gas measurements from aircraft. *Atmospheric Measurement Techniques*, **2013**, 6, 511-526	4	71
193	A high precision manometric system for absolute calibrations of CO2 in dry air. *Journal of Geophysical Research*, **1997**, 102, 5885-5894		70
192	Tropical nighttime warming as a dominant driver of variability in the terrestrial carbon sink. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 15591-6	11.5	69
191	A three-dimensional synthesis study of δ18O in atmospheric CO2: 2. Simulations with the TM2 transport model. *Journal of Geophysical Research*, **1997**, 102, 5873-5883		69
190	Deep air convection in the firn at a zero-accumulation site, central Antarctica. *Earth and Planetary Science Letters*, **2010**, 293, 359-367	5.3	68

189	A new high precision 14CO2 time series for North American continental air. *Journal of Geophysical Research*, **2007**, 112,		68
188	An improved Kalman Smoother for atmospheric inversions. *Atmospheric Chemistry and Physics*, **2005**, 5, 2691-2702	6.8	66
187	Canopy-scale 13C of photosynthetic and respiratory CO2 fluxes: observations in forest biomes across the United States. *Global Change Biology*, **2005**, 11, 633-643	11.4	64
186	Application of a Differential Fuel-Cell Analyzer for Measuring Atmospheric Oxygen Variations. *Journal of Atmospheric and Oceanic Technology*, **2007**, 24, 82-94	2	63
185	Revision of global carbon fluxes based on a reassessment of oceanic and riverine carbon transport. *Nature Geoscience*, **2018**, 11, 504-509	18.3	60
184	Predicted shift in the 13 C/12 C ratio of atmospheric carbon dioxide. *Geophysical Research Letters*, **1980**, 7, 505-508	4.9	60
183	Global Carbon Budget 2017		60
182	Toward regional-scale modeling using the two-way nested global model TM5: Characterization of transport using SF6. *Journal of Geophysical Research*, **2004**, 109,		59
181	An Accounting of the Observed Increase in Oceanic and Atmospheric CO2 and the Outlook for the Future. *Oceanography*, **2009**, 22, 26-35	2.3	58
180	Accurate measurements of carbon monoxide in humid air using the cavity ring-down spectroscopy (CRDS) technique. *Atmospheric Measurement Techniques*, **2013**, 6, 1031-1040	4	56
179	Variations in atmospheric methane at Mauna Loa Observatory related to long-range transport. *Journal of Geophysical Research*, **1992**, 97, 6003		56
178	Improved Mechanistic Understanding of Natural Gas Methane Emissions from Spatially Resolved Aircraft Measurements. *Environmental Science & Technology*, **2017**, 51, 7286-7294	10.3	55
177	ObsPack: a framework for the preparation, delivery, and attribution of atmospheric greenhouse gas measurements. *Earth System Science Data*, **2014**, 6, 375-384	10.5	55
176	Vertical profiles of CO2 above eastern Amazonia suggest a net carbon flux to the atmosphere and balanced biosphere between 2000 and 2009. *Tellus, Series B: Chemical and Physical Meteorology*, **2010**, 62, 581-594	3.3	55
175	Atmospheric potential oxygen: New observations and their implications for some atmospheric and oceanic models. *Global Biogeochemical Cycles*, **2006**, 20, n/a-n/a	5.9	55
174	Regional US carbon sinks from three-dimensional atmospheric CO2 sampling. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 18348-53	11.5	54
173	Atmospheric O2/N2 changes, 1993–2002: Implications for the partitioning of fossil fuel CO2 sequestration. *Global Biogeochemical Cycles*, **2005**, 19, n/a-n/a	5.9	54
172	. *Tellus, Series B: Chemical and Physical Meteorology*, **1998**, 50, 163-178	3.3	53

171	Improving stratospheric transport trend analysis based on SF6 and CO2 measurements. *Journal of Geophysical Research D: Atmospheres*, **2014**, 119, 14,110-14,128	4.4	52
170	Anthropogenic sources of halocarbons, sulfur hexafluoride, carbon monoxide, and methane in the southeastern United States. *Journal of Geophysical Research*, **1997**, 102, 15915-15925		52
169	Atmospheric observations of carbon monoxide and fossil fuel CO2 emissions from East Asia. *Journal of Geophysical Research*, **2011**, 116, n/a-n/a		51
168	Chemical pretreatment and radial flow of 14C in tree rings. *Nature*, **1978**, 271, 234-235	50.4	50
167	Trends and temporal variations of major greenhouse gases at a rural site in Central Europe. *Atmospheric Environment*, **2008**, 42, 8707-8716	5.3	47
166	Global Carbon Budget 2021. *Earth System Science Data*, **2022**, 14, 1917-2005	10.5	47
165	Carbon flux estimation for Siberia by inverse modeling constrained by aircraft and tower CO2 measurements. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 1100-1122	4.4	46
164	Carbon isotope discrimination of arctic and boreal biomes inferred from remote atmospheric measurements and a biosphere-atmosphere model. *Global Biogeochemical Cycles*, **2002**, 16, 1-1-1-15	5.9	46
163	Carbon monoxide budget in the northern hemisphere. *Geophysical Research Letters*, **1994**, 21, 433-436	4.9	46
162	Atmospheric Carbon Dioxide Variability in the Community Earth System Model: Evaluation and Transient Dynamics during the Twentieth and Twenty-First Centuries. *Journal of Climate*, **2013**, 26, 4447-4475	4.4	45
161	Correlations among combustion effluent species at Barrow, Alaska: Aerosol black carbon, carbon dioxide, and methane. *Journal of Atmospheric Chemistry*, **1989**, 9, 283-299	3.2	45
160	A comprehensive global three-dimensional model of δ18O in atmospheric CO2: 2. Mapping the atmospheric signal. *Journal of Geophysical Research*, **2003**, 108,		44
159	No significant increase in long-term CH4 emissions on North Slope of Alaska despite significant increase in air temperature. *Geophysical Research Letters*, **2016**, 43, 6604-6611	4.9	44
158	. *Tellus*, **1980**, 32, 268-283		42
157	U.S. CH4 emissions from oil and gas production: Have recent large increases been detected?. *Journal of Geophysical Research D: Atmospheres*, **2017**, 122, 4070-4083	4.4	41
156	Calculating isotopic fractionation from atmospheric measurements at various scales. *Tellus, Series B: Chemical and Physical Meteorology*, **2003**, 55, 207-214	3.3	41
155	Biosphere model simulations of interannual variability in terrestrial 13C/12C exchange. *Global Biogeochemical Cycles*, **2013**, 27, 637-649	5.9	40
154	Volatile Organic Compounds in the Global Atmosphere. *Eos*, **2009**, 90, 513-514	1.5	40

153	A global calculation of the 13C of soil respired carbon: Implications for the biospheric uptake of anthropogenic CO2. *Global Biogeochemical Cycles*, **1999**, 13, 519-530	5.9	40
152	Atmospheric carbon dioxide measurements in the remote global troposphere, 1981-1984. *Tellus, Series B: Chemical and Physical Meteorology*, **1988**, 40, 81-115	3.3	40
151	Climate change. Carbon crucible. *Science*, **2008**, 320, 460-1	33.3	39
150	A multi-year record of airborne CO₂ observations in the US Southern Great Plains. *Atmospheric Measurement Techniques*, **2013**, 6, 751-763	4	38
149	Boreal ecosystems sequestered more carbon in warmer years. *Geophysical Research Letters*, **2006**, 33, n/a-n/a	4.9	38
148	Atmospheric CO2 inversion validation using vertical profile measurements: Analysis of four independent inversion models. *Journal of Geophysical Research*, **2011**, 116,		37
147	A 3-dimensional study of delta18O in atmospheric CO2: contribution of different land ecosystems. *Tellus, Series B: Chemical and Physical Meteorology*, **1999**, 51, 642-667	3.3	37
146	Estimating Asian terrestrial carbon fluxes from CONTRAIL aircraft and surface CO₂ observations for the period 2006–2010. *Atmospheric Chemistry and Physics*, **2014**, 14, 5807-5824	6.8	35
145	High-resolution emissions of CO2 from power generation in the USA. *Journal of Geophysical Research*, **2008**, 113,		35
144	Estimating photosynthetic 13C discrimination in terrestrial CO2 exchange from canopy to regional scales. *Global Biogeochemical Cycles*, **2004**, 18, n/a-n/a	5.9	35
143	Net terrestrial CO2 exchange over China during 2001–2010 estimated with an ensemble data assimilation system for atmospheric CO2. *Journal of Geophysical Research D: Atmospheres*, **2014**, 119, 3500-3515	4.4	33
142	Spatial and temporal resolution of carbon flux estimates for 1983–2002. *Biogeosciences*, **2011**, 8, 1309-1331	4.6	33
141	Oxygen isotopic equilibrium between carbon dioxide and water in soils. *Tellus, Series B: Chemical and Physical Meteorology*, **1998**, 50, 163-178	3.3	33
140	. *Tellus*, **1980**, 32, 464-469		33
139	The seasonal cycle of atmospheric CO2: A study based on the NCAR Community Climate Model (CCM2). *Journal of Geophysical Research*, **1996**, 101, 15079-15097		32
138	Controls on the movement and composition of firn air at the West Antarctic Ice Sheet Divide. *Atmospheric Chemistry and Physics*, **2011**, 11, 11007-11021	6.8	31
137	Spatial distribution of ¹⁴CO₂ across Eurasia: measurements from the TROICA-8 expedition. *Atmospheric Chemistry and Physics*, **2009**, 9, 175-187	6.8	31
136	Long-Term Measurements Show Little Evidence for Large Increases in Total U.S. Methane Emissions Over the Past Decade. *Geophysical Research Letters*, **2019**, 46, 4991-4999	4.9	30

135	Impact of CO2 measurement bias on CarbonTracker surface flux estimates. *Journal of Geophysical Research*, **2011**, 116,		30
134	A 3-dimensional study of δ18O in atmospheric CO2: contribution of different land ecosystems. *Tellus, Series B: Chemical and Physical Meteorology*, **1999**, 51, 642-667	3.3	30
133	Bias corrections of GOSAT SWIR XCO₂ and XCH₄ with TCCON data and their evaluation using aircraft measurement data. *Atmospheric Measurement Techniques*, **2016**, 9, 3491-3512	4	30
132	Characteristics of atmospheric CO2 and CH4 at the Shangdianzi regional background station in China. *Atmospheric Environment*, **2016**, 131, 1-8	5.3	29
131	Inverse Modeling of CO2 Fluxes Using GOSAT Data and Multi-Year Ground-Based Observations. *Scientific Online Letters on the Atmosphere*, **2013**, 9, 45-50	2.1	29
130	A Design for Unattended Monitoring of Carbon Dioxide on a Very Tall Tower. *Journal of Atmospheric and Oceanic Technology*, **1997**, 14, 1139-1145	2	29
129	The atmospheric signal of terrestrial carbon isotopic discrimination and its implication for partitioning carbon fluxes		29
128	Estimating US fossil fuel CO emissions from measurements of C in atmospheric CO. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 13300-13307	11.5	28
127	Three-dimensional SF6 data and tropospheric transport simulations: Signals, modeling accuracy, and implications for inverse modeling. *Journal of Geophysical Research*, **2007**, 112,		27
126	Sampling, storage, and analysis of C2-C7 non-methane hydrocarbons from the US National Oceanic and Atmospheric Administration Cooperative Air Sampling Network glass flasks. *Journal of Chromatography A*, **2008**, 1188, 75-87	4.5	27
125	Evaluation of solid adsorbent materials for cryogen-free trapping-gas chromatographic analysis of atmospheric C2-C6 non-methane hydrocarbons. *Journal of Chromatography A*, **2006**, 1134, 1-15	4.5	27
124	THE GLOBAL CARBON CYCLE:In Balance, with a Little Help from the Plants **1998**, 281, 183-184		27
123	Enhanced North American carbon uptake associated with El Niño. *Science Advances*, **2019**, 5, eaaw0076	14.3	26
122	Validation of XCH₄ derived from SWIR spectra of GOSAT TANSO-FTS with aircraft measurement data. *Atmospheric Measurement Techniques*, **2014**, 7, 2987-3005	4	26
121	Novel applications of carbon isotopes in atmospheric CO₂: what can atmospheric measurements teach us about processes in the biosphere?. *Biogeosciences*, **2011**, 8, 3093-3106	4.6	26
120	An integrated flask sample collection system for greenhouse gas measurements. *Atmospheric Measurement Techniques*, **2012**, 5, 2321-2327	4	26
119	An approach for verifying biogenic greenhouse gas emissions inventories with atmospheric CO 2 concentration data. *Environmental Research Letters*, **2015**, 10, 034012	6.2	25
118	Reconstruction of Northern Hemisphere 1950–2010 atmospheric non-methane hydrocarbons. *Atmospheric Chemistry and Physics*, **2014**, 14, 1463-1483	6.8	25

117	Allocation of Terrestrial Carbon Sources Using 14CO2: Methods, Measurement, and Modeling. *Radiocarbon*, **2013**, 55, 1484-1495	4.6	25
116	Land use and season affect fluxes of CO2, CH4, CO, N2O, H2 and isotopic source signatures in Panama: evidence from nocturnal boundary layer profiles. *Global Change Biology*, **2010**, 16, 2721-2736	11.4	25
115	Abundances of isotopologues and calibration of CO₂ greenhouse gas measurements. *Atmospheric Measurement Techniques*, **2017**, 10, 2669-2685	4	24
114	Tracking climate forcing: The annual greenhouse gas index. *Eos*, **2006**, 87, 509	1.5	24
113	An interpretation of trace gas correlations during Barrow, Alaska, winter dark periods, 1986–1997. *Journal of Geophysical Research*, **2000**, 105, 17267-17278		24
112	U.S. emissions of HFC-134a derived for 2008–2012 from an extensive flask-air sampling network. *Journal of Geophysical Research D: Atmospheres*, **2015**, 120, 801-825	4.4	23
111	Regional N₂O fluxes in Amazonia derived from aircraft vertical profiles. *Atmospheric Chemistry and Physics*, **2009**, 9, 8785-8797	6.8	23
110	Land use effects on atmospheric 13C imply a sizable terrestrial CO2 sink in tropical latitudes. *Geophysical Research Letters*, **2002**, 29, 68-1-68-4	4.9	23
109	Development of the CO2 latitude gradient in recent decades. *Global Biogeochemical Cycles*, **1999**, 13, 821-826	5.9	23
108	On calculating the transfer of carbon-13 in reservoir models of the carbon cycle. *Tellus*, **1980**, 32, 464-469		23
107	Continued emissions of carbon tetrachloride from the United States nearly two decades after its phaseout for dispersive uses. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 2880-5	11.5	22
106	Considerable contribution of the Montreal Protocol to declining greenhouse gas emissions from the United States. *Geophysical Research Letters*, **2017**, 44, 8075-8083	4.9	22
105	Constraints on emissions of carbon monoxide, methane, and a suite of hydrocarbons in the Colorado Front Range using observations of ¹⁴CO₂. *Atmospheric Chemistry and Physics*, **2013**, 13, 11101-11120	6.8	21
104	Design, Construction and Calibration of A High Accuracy Carbon-14 Counting Set up. *Radiocarbon*, **1978**, 21, 22-40	4.6	21
103	Investigating Alaskan methane and carbon dioxide fluxes using measurements from the CARVE tower. *Atmospheric Chemistry and Physics*, **2016**, 16, 5383-5398	6.8	20
102	Apparent seasonal cycle in isotopic discrimination of carbon in the atmosphere and biosphere due to vapor pressure deficit. *Global Biogeochemical Cycles*, **2010**, 24, n/a-n/a	5.9	20
101	Strategies for measurement of atmospheric column means of carbon dioxide from aircraft using discrete sampling. *Journal of Geophysical Research*, **2003**, 108,		20
100	Atmospheric constraints on 2004 emissions of methane and nitrous oxide in North America from atmospheric measurements and a receptor-oriented modeling framework. *Journal of Integrative Environmental Sciences*, **2010**, 7, 125-133	3	19

99	Regional CO2 fluxes inferred from mixing ratio measurements: estimates from flask air samples in central Kansas, USA. *Tellus, Series B: Chemical and Physical Meteorology*, **2006**, 58, 523-536	3.3	19
98	The CO2 Budget and Rectification Airborne Study: Strategies for Measuring Rectifiers and Regional Fluxes. *Geophysical Monograph Series*, **2000**, 311-324	1.1	19
97	A new method for describing long-term changes in total ozone. *Geophysical Research Letters*, **2001**, 28, 4535-4538	4.9	19
96	Analysis of CO₂ mole fraction data: first evidence of large-scale changes in CO₂ uptake at high northern latitudes. *Atmospheric Chemistry and Physics*, **2015**, 15, 13739-13758	6.8	18
95	Short-term variations of atmospheric CO2 and dominant causes in summer and winter: Analysis of 14-year continuous observational data at Waliguan, China. *Atmospheric Environment*, **2013**, 77, 140-148	5.3	18
94	CO₂, CO and CH₄ measurements from the NOAA Earth System Research Laboratory's Tall Tower Greenhouse Gas Observing Network: instrumentation, uncertainty analysis and recommendations for future high-accuracy greenhouse gas monitoring efforts **2013**,		18
93	Mauna Loa volcano is not a methane source: Implications for Mars. *Geophysical Research Letters*, **2006**, 33,	4.9	18
92	Comparison of the regional CO₂ mole fraction filtering approaches at a WMO/GAW regional station in China. *Atmospheric Measurement Techniques*, **2015**, 8, 5301-5313	4	17
91	Atmospheric column-averaged mole fractions of carbon dioxide at 53 aircraft measurement sites. *Atmospheric Chemistry and Physics*, **2013**, 13, 5265-5275	6.8	17
90	Measurements of landscape-scale fluxes of carbon dioxide in the Peruvian Amazon by vertical profiling through the atmospheric boundary layer. *Journal of Geophysical Research*, **2000**, 105, 22137-22146		17
89	The carbon cycle response to two El Nino types: an observational study. *Environmental Research Letters*, **2018**, 13, 024001	6.2	16
88	The atmospheric signal of terrestrial carbon isotopic discrimination and its implication for partitioning carbon fluxes. *Tellus, Series B: Chemical and Physical Meteorology*, **2003**, 55, 197-206	3.3	16
87	Simulation of variability in atmospheric carbon dioxide using a global coupled Eulerian–Lagrangian transport model. *Geoscientific Model Development*, **2011**, 4, 317-324	6.3	15
86	Error estimates of background atmospheric CO2 patterns from weekly flask samples. *Journal of Geophysical Research*, **1990**, 95, 14063		15
85	Long-term air quality monitoring at the South Pole by the NOAA Program Geophysical Monitoring for Climatic Change. *Reviews of Geophysics*, **1988**, 26, 63	23.1	15
84	COCAP: a carbon dioxide analyser for small unmanned aircraft systems. *Atmospheric Measurement Techniques*, **2018**, 11, 1833-1849	4	15
83	Study of atmospheric CO2 and CH4 at Longfengshan WMO/GAW regional station: The variations, trends, influence of local sources/sinks, and transport. *Science China Earth Sciences*, **2017**, 60, 1886-1895	4.6	14
82	On the regional background levels of carbon monoxide observed in East Asia during 1991~2004. *Air Quality, Atmosphere and Health*, **2008**, 1, 37-44	5.6	14

81	A direct carbon budgeting approach to infer carbon sources and sinks. Design and synthetic application to complement the NACP observation network. *Tellus, Series B: Chemical and Physical Meteorology*, **2006**, 58, 366-375	3.3	14
80	Climatological variability of air temperature and precipitation observed in South Korea for the last 50 years. *Air Quality, Atmosphere and Health*, **2016**, 9, 645-651	5.6	13
79	Atmospheric CO2 and its 13C measurements from flask sampling at Lin'an regional background station in China. *Atmospheric Environment*, **2015**, 117, 220-226	5.3	13
78	Analysis of patterns in the concentrations of atmospheric greenhouse gases measured in two typical urban clusters in China. *Atmospheric Environment*, **2018**, 173, 343-354	5.3	13
77	Observational Strategy for Assessing the Role of Terrestrial Ecosystems in the Global Carbon Cycle: Scaling Down to Regional Levels **1993**, 179-190		13
76	Decadal trends of atmospheric methane in East Asia from 1991 to 2013. *Air Quality, Atmosphere and Health*, **2015**, 8, 293-298	5.6	12
75	Modeling dynamics of stable carbon isotopic exchange between a boreal forest ecosystem and the atmosphere. *Global Change Biology*, **2006**, 12, 1842-1867	11.4	12
74	. *Tellus, Series B: Chemical and Physical Meteorology*, **1996**, 48, 568-582	3.3	12
73	Low background-rate detector for 40-keV ions using a conversion dynode and a microchannel-plate electron multiplier to reject low-energy ions, electrons, and photons. *Review of Scientific Instruments*, **1988**, 59, 98-111	1.7	12
72	Improved Constraints on Global Methane Emissions and Sinks Using C-CH. *Global Biogeochemical Cycles*, **2021**, 35, e2021GB007000	5.9	12
71	Observation of atmospheric CO2 and CO at Shangri-La station: results from the only regional station located at southwestern China. *Tellus, Series B: Chemical and Physical Meteorology*, **2016**, 68, 28506	3.3	12
70	Development of a Northern Continental Air Standard Reference Material. *Analytical Chemistry*, **2016**, 88, 3376-85	7.8	12
69	Deriving daily carbon fluxes from hourly CO2 mixing ratios measured on the WLEF tall tower: An upscaling methodology. *Journal of Geophysical Research*, **2007**, 112,		11
68	Experimental and numerical studies of the 18O exchange between CO2 and water in the atmosphere–soil invasion flux. *Geochimica Et Cosmochimica Acta*, **2007**, 71, 2657-2671	5.5	11
67	Gradients of column CO₂ across North America from the NOAA Global Greenhouse Gas Reference Network. *Atmospheric Chemistry and Physics*, **2017**, 17, 15151-15165	6.8	10
66	Temperature anomaly reemergence in seasonally frozen soils. *Journal of Geophysical Research*, **2007**, 112,		10
65	Atmospheric carbon dioxide measurements at Cape Matatula, American Samoa, 1976–1987. *Journal of Geophysical Research*, **1989**, 94, 14817-14829		10
64	Siberian and temperate ecosystems shape Northern Hemisphere atmospheric CO seasonal amplification. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 21079-21087	11.5	10

63	A Cost-Effective Trace Gas Measurement Program for Long-Term Monitoring of the Stratospheric Circulation. *Bulletin of the American Meteorological Society*, **2014**, 95, 147-155	6.1	9
62	Simulating dynamics of 13C of CO2 in the planetary boundary layer over a boreal forest region: covariation between surface fluxes and atmospheric mixing. *Tellus, Series B: Chemical and Physical Meteorology*, **2006**, 58, 537-549	3.3	9
61	Correction to A dramatic decrease in the growth rate of atmospheric methane in the northern hemisphere during 1992 by E. J. Dlugokencky, K. A. Masarie, P. M. Lang, P. P. Tans, L. P. Steele, and E. G. Nisbet. *Geophysical Research Letters*, **1994**, 21, 507-507	4.9	9
60	COS-derived GPP relationships with temperature and light help explain high-latitude atmospheric CO seasonal cycle amplification. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	9
59	A study on carbon dioxide concentrations and carbon isotopes measured in East Asia during 1991 2011. *Air Quality, Atmosphere and Health*, **2014**, 7, 173-179	5.6	8
58	Reply to comment on Hydrocarbon emissions characterization in the Colorado Front Range A pilot study by Michael A. Levi. *Journal of Geophysical Research D: Atmospheres*, **2013**, 118, 236-242	4.4	8
57	Reply to Comments on A dramatic decrease in the growth rate of atmospheric methane in the northern hemisphere during 1992' *Geophysical Research Letters*, **1994**, 21, 2447-2448	4.9	8
56	CTDAS-Lagrange v1.0: a high-resolution data assimilation system for regional carbon dioxide observations. *Geoscientific Model Development*, **2018**, 11, 3515-3536	6.3	8
55	Comparison of atmospheric CO2 mole fractions and source sink characteristics at four WMO/GAW stations in China. *Atmospheric Environment*, **2018**, 180, 216-225	5.3	7
54	Stable isotopic analysis of atmospheric methane by infrared spectroscopy by use of diode laser difference-frequency generation. *Applied Optics*, **2006**, 45, 4136-41	1.7	7
53	. *Tellus, Series B: Chemical and Physical Meteorology*, **1999**, 51, 562-571	3.3	7
52	A 40 keV cyclotron for radioisotope dating. *Nuclear Instruments & Methods in Physics Research B*, **1984**, 5, 230-232	1.2	7
51	Revision of the World Meteorological Organization Global Atmosphere Watch (WMO/GAW) CO₂ calibration scale. *Atmospheric Measurement Techniques*, **2021**, 14, 3015-3032	4	7
50	The Co2 Lifetime Concept Should Be Banished; An Editorial Comment. *Climatic Change*, **1997**, 37, 487-490	4.5	6
49	Carbon cycle research after Kyoto. *Tellus, Series B: Chemical and Physical Meteorology*, **1999**, 51, 562-571	3.3	6
48	Influence of two atmospheric transport models on inf erring sources and sinks of atmospheric CO2. *Tellus, Series B: Chemical and Physical Meteorology*, **1996**, 48, 568-582	3.3	6
47	Strong Southern Ocean carbon uptake evident in airborne observations. *Science*, **2021**, 374, 1275-1280	33.3	6
46	Validation of XCO₂ derived from SWIR spectra of GOSAT TANSO-FTS with aircraft measurement data		6

45	Atmospheric CO2 at Waliguan station in China: Transport climatology, temporal patterns and source-sink region representativeness. *Atmospheric Environment*, **2017**, 159, 107-116	5.3	5
44	Long-term greenhouse gas measurements from aircraft **2012**,		5
43	On the regional distributions of background carbon monoxide concentrations observed in East Asia during 1991–2008. *Asia-Pacific Journal of Atmospheric Sciences*, **2010**, 46, 89-95	2.1	5
42	Separating contributions from natural and anthropogenic sources in atmospheric methane from the Black Sea region, Romania. *Applied Geochemistry*, **2008**, 23, 2871-2879	3.5	5
41	Investigating large methane enhancements in the U.S. San Juan Basin. *Elementa*, **2020**, 8,	3.6	5
40	Experiments with CO₂-in-air reference gases in high-pressure aluminum cylinders. *Atmospheric Measurement Techniques*, **2018**, 11, 5565-5586	4	5
39	Strong regional atmospheric 14C signature of respired CO2 observed from a tall tower over the midwestern United States. *Journal of Geophysical Research G: Biogeosciences*, **2016**, 121, 2275-2295	3.7	4
38	The CarbonTracker Data Assimilation System for CO₂ and <i></i>¹³C (CTDAS-C13 v1.0): retrieving information on land–atmosphere exchange processes. *Geoscientific Model Development*, **2018**, 11, 283-304	6.3	4
37	Ratios of greenhouse gas emissions observed over the Yellow Sea and the East China Sea. *Science of the Total Environment*, **2018**, 633, 1022-1031	10.2	4
36	Accurate measurements of carbon monoxide in humid air using the cavity ring-down spectroscopy (CRDS) technique **2012**,		4
35	An improved Kalman Smoother for atmospheric inversions		4
34	Very old firn air linked to strong density layering at Styx Glacier, coastal Victoria Land, East Antarctica. *Cryosphere*, **2019**, 13, 2407-2419	5.5	3
33	Steps for success of OCO-2. *Nature Geoscience*, **2014**, 7, 691-691	18.3	3
32	A multi-year record of airborne CO₂ observations in the US Southern Great Plains **2012**,		3
31	A Time-Dependent Assimilation and Source Retrieval Technique for Atmospheric Tracers. *Geophysical Monograph Series*, **2000**, 265-277	1.1	3
30	Constraints on emissions of carbon monoxide, methane, and a suite of hydrocarbons in the Colorado Front Range using observations of ¹⁴CO₂		3
29	In-situ measurement of atmospheric CO₂ at the four WMO/GAW stations in China		3
28	CarbonTracker-CH₄: an assimilation system for estimating emissions of atmospheric methane		3

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27	Analysis of CO₂ mole fraction data: first evidence of large-scale changes in CO₂ uptake at high northern latitudes		3
26	Spatial and temporal resolution of carbon flux estimates for 1983–2002		3
25	Trends and Temporal Variations of Major Greenhouse Gases at a Rural Site in Central Europe **2011**, 29-47		3
24	Potential improvements aimed at high precision δ isotopic ratio determinations in CO mixtures using optical absorption spectrometry. *Talanta*, **2018**, 184, 73-86	6.2	2
23	Microcollection of gases in a capillary tube: preservation of spatial and temporal resolution. *Analytical Chemistry*, **2012**, 84, 8310-6	7.8	2
22	An integrated flask sample collection system for greenhouse gas measurements **2012**,		2
21	Variability analyses, site characterization, and regional [OH] estimates using trace gas measurements from the NOAA Global Greenhouse Gas Reference Network. *Elementa*, **2016**, 4,	3.6	2
20	Controls on the movement and composition of firn air at the West Antarctic Ice Sheet Divide		2
19	Reconstruction of Northern Hemisphere 1950–2010 atmospheric non-methane hydrocarbons		2
18	Estimating Asian terrestrial carbon fluxes from CONTRAIL aircraft and surface CO₂ observations for the period 2006 to 2010		2
17	Investigating Alaskan methane and carbon dioxide fluxes using measurements from the CARVE tower		2
16	Study of the regional CO₂ mole fractions filtering approach at a WMO/GAW regional station in China		2
15	Corrigendum to "Atmospheric column-averaged mole fractions of carbon dioxide at 53 aircraft measurement sites" published in Atmos. Chem. Phys. 13, 5265–5275, 2013. *Atmospheric Chemistry and Physics*, **2013**, 13, 9213-9216	6.8	1
14	Estimation of regional surface CO2fluxes with GOSAT observations using two inverse modeling approaches **2012**,		1
13	Regional N₂O fluxes in Amazonia derived from aircraft vertical profiles		1
12	C₃-C₅ alkanes in the atmosphere: concentration, seasonal cycle and contribution to the atmospheric budgets of acetone and acetaldehyde		1
11	Audit of the global carbon budget: estimate errors and their impact on uptake uncertainty		1
10	Novel applications of carbon isotopes in atmospheric CO₂: what can atmospheric measurements teach us about processes in the biosphere?		1

9	ObsPack: a framework for the preparation, delivery, and attribution of atmospheric greenhouse gas data		1
8	Measurement of fossil fuel derived carbon dioxide and other anthropogenic trace gases above Sacramento, California in Spring 2009		1
7	Atmospheric column-averaged mole fractions of carbon dioxide at 53 aircraft measurement sites		1
6	Estimating the short-time rate of change in the trend of the Keeling curve. *Scientific Reports*, **2020**, 10, 21222	4.9	1
5	Atmospheric oil and natural gas hydrocarbon trends in the Northern Colorado Front Range are notably smaller than inventory emissions reductions. *Elementa*, **2021**, 9,	3.6	1
4	Fill dynamics and sample mixing in the AirCore. *Atmospheric Measurement Techniques*, **2022**, 15, 1903-1916	4	1
3	Multiyear average characteristics of CO2 variations in the free atmosphere over Colorado (40°N, 104°W). *Atmospheric Environment*, **2013**, 72, 159-164	5.3	
2	REMINISCING ON THE USE AND ABUSE OF 14C AND 13C IN ATMOSPHERIC CO2. *Radiocarbon*,1-14	4.6	
1	Comments on Skrable et al. (2022).. *Health Physics*, **2022**, 122, 707-709	2.3	