Kevin Gurney

List of Publications by Year
in descending order

115 papers	11,359 citations	53660 45 h-index	32761 100 g-index
126 all docs	126 docs citations	126 times ranked	9331 citing authors

#	Article	IF	Citations
1	Trends in the sources and sinks of carbon dioxide. Nature Geoscience, 2009, 2, 831-836.	5.4	1,746
2	Towards robust regional estimates of CO2 sources and sinks using atmospheric transport models. Nature, 2002, 415, 626-630.	13.7	1,157
3	Weak Northern and Strong Tropical Land Carbon Uptake from Vertical Profiles of Atmospheric CO2. Science, 2007, 316, 1732-1735.	6.0	775
4	TransCom 3 inversion intercomparison: Impact of transport model errors on the interannual variability of regional CO2fluxes, 1988-2003. Global Biogeochemical Cycles, 2006, 20, n/a-n/a.	1.9	417
5	High Resolution Fossil Fuel Combustion CO₂ Emission Fluxes for the United States. Environmental Science & Technology, 2009, 43, 5535-5541.	4.6	414
6	The terrestrial biosphere as a net source of greenhouse gases to the atmosphere. Nature, 2016, 531, 225-228.	13.7	402
7	Global atmospheric carbon budget: results from an ensemble of atmospheric CO₂ inversions. Biogeosciences, 2013, 10, 6699-6720.	1.3	356
8	Transcom 3 inversion intercomparison: Model mean results for the estimation of seasonal carbon sources and sinks. Global Biogeochemical Cycles, 2004, 18, n/a-n/a.	1.9	312
9	Contrasting carbon cycle responses of the tropical continents to the 2015â€“2016 El NiÃ±o. Science, 2017, 358, .	6.0	307
10	TransCom 3 CO2 inversion intercomparison: 1. Annual mean control results and sensitivity to transport and prior flux information. Tellus, Series B: Chemical and Physical Meteorology, 2003, 55, 555-579.	0.8	235
11	Highâ€resolution atmospheric inversion of urban CO₂ emissions during the dormant season of the Indianapolis Flux Experiment (INFLUX). Journal of Geophysical Research D: Atmospheres, 2016, 121, 5213-5236.	1.2	219
12	Quantification of Fossil Fuel CO₂ Emissions on the Building/Street Scale for a Large U.S. City. Environmental Science & Technology, 2012, 46, 12194-12202.	4.6	211
13	Modeling energy consumption and CO2 emissions at the urban scale: Methodological challenges and insights from the United States. Energy Policy, 2010, 38, 4765-4782.	4.2	203
14	Current systematic carbon-cycle observations and the need for implementing a policy-relevant carbon observing system. Biogeosciences, 2014, 11, 3547-3602.	1.3	189
15	Is the northern high-latitude land-based CO₂sink weakening?. Global Biogeochemical Cycles, 2011, 25, n/a-n/a.	1.9	184
16	Aircraft-Based Measurements of the Carbon Footprint of Indianapolis. Environmental Science & Technology, 2009, 43, 7816-7823.	4.6	167
17	Urbanization and the carbon cycle: Current capabilities and research outlook from the natural sciences perspective. Earth's Future, 2014, 2, 473-495.	2.4	159
18	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.	1.2	140

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19	Climate change: Track urban emissions on a human scale. Nature, 2015, 525, 179-181.	13.7	138
20	Improving the temporal and spatial distribution of CO₂ emissions from global fossil fuel emission data sets. Journal of Geophysical Research D: Atmospheres, 2013, 118, 917-933.	1.2	122
21	A multiyear, global gridded fossil fuel CO₂ emission data product: Evaluation and analysis of results. Journal of Geophysical Research D: Atmospheres, 2014, 119, 10,213.	1.2	121
22	Long-term urban carbon dioxide observations reveal spatial and temporal dynamics related to urban characteristics and growth. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 2912-2917.	3.3	120
23	Maximum likelihood estimation of covariance parameters for Bayesian atmospheric trace gas surface flux inversions. Journal of Geophysical Research, 2005, 110, .	3.3	118
24	A critical knowledge pathway to lowâ€carbon, sustainable futures: Integrated understanding of urbanization, urban areas, and carbon. Earth's Future, 2014, 2, 515-532.	2.4	110
25	Assessment of uncertainties of an aircraft-based mass balance approach for quantifying urban greenhouse gas emissions. Atmospheric Chemistry and Physics, 2014, 14, 9029-9050.	1.9	109
26	TransCom 3 CO₂ inversion intercomparison: 1. Annual mean control results and sensitivity to transport and prior flux information. Tellus, Series B: Chemical and Physical Meteorology, 2022, 55, 555.	0.8	105
27	Los Angeles megacity: a high-resolution landâ€"atmosphere modelling system for urban CO₂ emissions. Atmospheric Chemistry and Physics, 2016, 16, 9019-9045.	1.9	101
28	Sensitivity of atmospheric CO2inversions to seasonal and interannual variations in fossil fuel emissions. Journal of Geophysical Research, 2005, 110, .	3.3	100
29	Diurnal tracking of anthropogenic CO₂ emissions in the Los Angeles basin megacity during spring 2010. Atmospheric Chemistry and Physics, 2013, 13, 4359-4372.	1.9	100
30	Interannual variations in continentalâ€scale net carbon exchange and sensitivity to observing networks estimated from atmospheric CO₂ inversions for the period 1980 to 2005. Global Biogeochemical Cycles, 2008, 22, .	1.9	96
31	An International Effort to Quantify Regional Carbon Fluxes. Eos, 2011, 92, 81-82.	0.1	93
32	Three-dimensional transport and concentration of SF₆ A model intercomparison study (TransCom 2). Tellus, Series B: Chemical and Physical Meteorology, 2022, 51, 266.	0.8	88
33	On error estimation in atmospheric CO2inversions. Journal of Geophysical Research, 2002, 107, ACL 10-1.	3.3	79
34	TransCom 3 CO2 inversion intercomparison: 2. Sensitivity of annual mean results to data choices. Tellus, Series B: Chemical and Physical Meteorology, 2003, 55, 580-595.	0.8	74
35	Toward consistency between trends in bottom-up CO₂ emissions and top-down atmospheric measurements in the Los Angeles megacity. Atmospheric Chemistry and Physics, 2016, 16, 3843-3863.	1.9	72
36	Under-reporting of greenhouse gas emissions in U.S. cities. Nature Communications, 2021, 12, 553.	5.8	69

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37	A global dataset of CO2 emissions and ancillary data related to emissions for 343 cities. Scientific Data, 2019, 6, 180280.	2.4	65
38	Estimating US fossil fuel CO ₂ emissions from measurements of ¹⁴ C in atmospheric CO ₂. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 13300-13307.	3.3	65
39	Comparison of Global Downscaled Versus Bottomâ€Up Fossil Fuel CO₂ Emissions at the Urban Scale in Four U.S. Urban Areas. Journal of Geophysical Research D: Atmospheres, 2019, 124, 2823-2840.	1.2	61
40	The Indianapolis Flux Experiment (INFLUX): A test-bed for developing urban greenhouse gas emission measurements. Elementa, 2017, 5, .	1.1	59
41	Southern California megacity CO₂, CH₄, and CO flux estimates using ground- and space-based remote sensing and a Lagrangian model. Atmospheric Chemistry and Physics, 2018, 18, 16271-16291.	1.9	56
42	Policy-Relevant Assessment of Urban CO₂ Emissions. Environmental Science & Technology, 2020, 54, 10237-10245.	4.6	52
43	Urban high-resolution fossil fuel CO2 emissions quantification and exploration of emission drivers for potential policy applications. Urban Ecosystems, 2016, 19, 1013-1039.	1.1	51
44	Synthesis of Urban CO₂ Emission Estimates from Multiple Methods from the Indianapolis Flux Project (INFLUX). Environmental Science & Technology, 2019, 53, 287-295.	4.6	50
45	The Vulcan Version 3.0 Highâ€Resolution Fossil Fuel CO₂ Emissions for the United States. Journal of Geophysical Research D: Atmospheres, 2020, 125, e2020JD032974.	1.2	50
46	Quantification and source apportionment of the methane emission flux from the city of Indianapolis. Elementa, 2015, 3, .	1.1	50
47	Global and Brazilian Carbon Response to El NiÃ±o Modoki 2011â€“2010. Earth and Space Science, 2017, 4, 637-660.	1.1	49
48	A new methodology for quantifying on-site residential and commercial fossil fuel CO₂emissions at the building spatial scale and hourly time scale. Carbon Management, 2010, 1, 45-56.	1.2	46
49	Assessing the optimized precision of the aircraft mass balance method for measurement of urban greenhouse gas emission rates through averaging. Elementa, 2017, 5, .	1.1	46
50	A new inversion method to calculate emission inventories without a prior at mesoscale: Application to the anthropogenic CO₂ emission from Houston, Texas. Journal of Geophysical Research, 2012, 117, .	3.3	44
51	Estimation of global CO₂ fluxes at regional scale using the maximum likelihood ensemble filter. Journal of Geophysical Research, 2008, 113, .	3.3	42
52	Societal shifts due to COVID-19 reveal large-scale complexities and feedbacks between atmospheric chemistry and climate change. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	42
53	CO2 and Carbon Emissions from Cities: Linkages to Air Quality, Socioeconomic Activity, and Stakeholders in the Salt Lake City Urban Area. Bulletin of the American Meteorological Society, 2018, 99, 2325-2339.	1.7	41
54	Greenhouse gas emissions from global cities under SSP/RCP scenarios, 1990 to 2100. Global Environmental Change, 2022, 73, 102478.	3.6	41

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55	Monthly trends of methane emissions in Los Angeles from 2011 to 2015 inferred by CLARS-FTS observations. Atmospheric Chemistry and Physics, 2016, 16, 13121-13130.	1.9	39
56	Toward reduced transport errors in a high resolution urban CO2 inversion system. Elementa, 2017, 5, .	1.1	36
57	The Hestia fossil fuel CO₂ emissions data product for the Los Angeles megacity (Hestia-LA). Earth System Science Data, 2019, 11, 1309-1335.	3.7	36
58	Topâ€Down Estimates of NO_{<i>x</i>} and CO Emissions From Washington, D.C.â€Baltimore During the WINTER Campaign. Journal of Geophysical Research D: Atmospheres, 2018, 123, 7705-7724.	1.2	35
59	On the impact of granularity of space-based urban CO2 emissions in urban atmospheric inversions: A case study for Indianapolis, IN. Elementa, 2017, 5, 28.	1.1	34
60	Regional trends in terrestrial carbon exchange and their seasonal signatures. Tellus, Series B: Chemical and Physical Meteorology, 2022, 63, 328.	0.8	32
61	Atmospheric Methane Emissions Correlate With Natural Gas Consumption From Residential and Commercial Sectors in Los Angeles. Geophysical Research Letters, 2019, 46, 8563-8571.	1.5	32
62	The Impact of COVIDâ€•19 on CO₂ Emissions in the Los Angeles and Washington DC/Baltimore Metropolitan Areas. Geophysical Research Letters, 2021, 48, e2021GL092744.	1.5	32
63	Simulating estimation of California fossil fuel and biosphere carbon dioxide exchanges combining in situ tower and satellite column observations. Journal of Geophysical Research D: Atmospheres, 2017, 122, 3653-3671.	1.2	32
64	Impact of climate change on U.S. building energy demand: sensitivity to spatiotemporal scales, balance point temperature, and population distribution. Climatic Change, 2016, 137, 171-185.	1.7	30
65	Reconciling the differences between a bottom-up and inverse-estimated FFCO2 emissions estimate in a large US urban area. Elementa, 2017, 5, .	1.1	28
66	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.	1.9	27
67	An approach for verifying biogenic greenhouse gas emissions inventories with atmospheric CO ₂ concentration data. Environmental Research Letters, 2015, 10, 034012.	2.2	27
68	Bias present in US federal agency power plant CO ₂ emissions data and implications for the US clean power plan. Environmental Research Letters, 2016, 11, 064005.	2.2	27
69	Assessing fossil fuel CO 2 emissions in California using atmospheric observations and models. Environmental Research Letters, 2018, 13, 065007.	2.2	27
70	Quantification of urban atmospheric boundary layer greenhouse gas dry mole fraction enhancements in the dormant season: Results from the Indianapolis Flux Experiment (INFLUX). Elementa, 2017, 5, .	1.1	24
71	A Road Map for Improving the Treatment of Uncertainties in Highâ€Resolution Regional Carbon Flux Inverse Estimates. Geophysical Research Letters, 2019, 46, 13461-13469.	1.5	23
72	Emissions and topographic effects on column CO 2 () variations, with a focus on the Southern California Megacity. Journal of Geophysical Research D: Atmospheres, 2017, 122, 7200-7215.	1.2	22

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73	Detecting drought impact on terrestrial biosphere carbon fluxes over contiguous US with satellite observations. Environmental Research Letters, 2018, 13, 095003.	2.2	22
74	An emerging GHG estimation approach can help cities achieve their climate and sustainability goals. Environmental Research Letters, 2021, 16, 084003.	2.2	22
75	CO2 Transport, Variability, and Budget over the Southern California Air Basin Using the High-Resolution WRF-VPRM Model during the CalNex 2010 Campaign. Journal of Applied Meteorology and Climatology, 2018, 57, 1337-1352.	0.6	21
76	Bayesian inverse estimation of urban CO2 emissions: Results from a synthetic data simulation over Salt Lake City, UT. Elementa, 2019, 7, .	1.1	20
77	TransCom 3 CO₂ inversion intercomparison: 2. Sensitivity of annual mean results to data choices. Tellus, Series B: Chemical and Physical Meteorology, 2022, 55, 580.	0.8	20
78	Research needs for finely resolved fossil carbon emissions. Eos, 2007, 88, 542-543.	0.1	19
79	Spatial relationships of sector-specific fossil fuel CO₂emissions in the United States. Global Biogeochemical Cycles, 2011, 25, n/a-n/a.	1.9	19
80	Joint inverse estimation of fossil fuel and biogenic CO2 fluxes in an urban environment: An observing system simulation experiment to assess the impact of multiple uncertainties. Elementa, 2018, 6, .	1.1	19
81	A global map of emission clumps for future monitoring of fossil fuel CO₂ emissions from space. Earth System Science Data, 2019, 11, 687-703.	3.7	19
82	Implications of uncertainty on regional CO2 mitigation policies for the U.S. onroad sector based on a high-resolution emissions estimate. Energy Policy, 2013, 55, 386-395.	4.2	17
83	Combining Measurements of Built-up Area, Nighttime Light, and Travel Time Distance for Detecting Changes in Urban Boundaries: Introducing the BUNTUS Algorithm. Remote Sensing, 2019, 11, 2969.	1.8	17
84	A positive carbon feedback to ENSO and volcanic aerosols in the tropical terrestrial biosphere. Global Biogeochemical Cycles, 2012, 26, .	1.9	16
85	Recent research quantifying anthropogenic CO₂emissions at the street scale within the urban domain. Carbon Management, 2014, 5, 309-320.	1.2	16
86	Source Sector Attribution of CO₂ Emissions Using an Urban CO/CO₂ Bayesian Inversion System. Journal of Geophysical Research D: Atmospheres, 2018, 123, 13,611.	1.2	16
87	Constraining Urban CO_₂ Emissions Using Mobile Observations from a Light Rail Public Transit Platform. Environmental Science & Technology, 2020, 54, 15613-15621.	4.6	16
88	The space and time impacts on U.S. regional atmospheric CO₂ concentrations from a high resolution fossil fuel CO₂ emissions inventory. Tellus, Series B: Chemical and Physical Meteorology, 2022, 62, 506.	0.8	15
89	Toward Accurate, Policy-Relevant Fossil Fuel CO2 Emission Landscapes. Environmental Science & Technology, 2020, 54, 9896-9907.	4.6	14
90	Towards spaceborne monitoring of localized CO₂ emissions: an instrument concept and first performance assessment. Atmospheric Measurement Techniques, 2020, 13, 2887-2904.	1.2	13

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91	Carbon monoxide isotopic measurements in Indianapolis constrain urban source isotopic signatures and support mobile fossil fuel emissions as the dominant wintertime CO source. Elementa, 2017, 5, .	1.1	13
92	A Sensitivity Analysis of Surface Biophysical, Carbon, and Climate Impacts of Tropical Deforestation Rates in CCSM4-CNDV*. Journal of Climate, 2013, 26, 805-821.	1.2	12
93	Numerical simulation of atmospheric CO2 concentration and flux over the Korean Peninsula using WRF-VPRM model during Korus-AQ 2016 campaign. PLoS ONE, 2020, 15, e0228106.	1.1	12
94	Fluxes of Atmospheric Greenhouseâ€Gases in Maryland (FLAGGâ€MD): Emissions of Carbon Dioxide in the Baltimore, MDâ€Washington, D.C. Area. Journal of Geophysical Research D: Atmospheres, 2020, 125, e2019JD032004.	1.2	11
95	Targeting deforestation rates in climate change policy: a "Preservation Pathway" approach. Carbon Balance and Management, 2008, 3, 2.	1.4	10
96	On the variation of regional CO₂ exchange over temperate and boreal North America. Global Biogeochemical Cycles, 2013, 27, 991-1000.	1.9	10
97	Beyond Hammers and Nails: Mitigating and Verifying Greenhouse Gas Emissions. Eos, 2013, 94, 199-199.	0.1	10
98	Atmospheric observation-based estimation of fossil fuel CO2 emissions from regions of central and southern California. Science of the Total Environment, 2019, 664, 381-391.	3.9	10
99	Estimating CO₂ emissions for 108â€‰000 European cities. Earth System Science Data, 2022, 14, 845-864.	3.7	10
100	Informing urban climate planning with high resolution data: the Hestia fossil fuel CO2 emissions for Baltimore, Maryland. Carbon Balance and Management, 2020, 15, 22.	1.4	9
101	Investigations into the use of multi-species measurements for source apportionment of the Indianapolis fossil fuel <i>CO</i>2 signal. Elementa, 2018, 6, .	1.1	9
102	New York City greenhouse gas emissions estimated with inverse modeling of aircraft measurements. Elementa, 2022, 10, .	1.1	8
103	Response to Comment on â€œContrasting carbon cycle responses of the tropical continents to the 2015â€"2016 El NiÃ±oâ€. Science, 2018, 362, .	6.0	6
104	Estimating nitrous oxide (N2O) emissions for the Los Angeles Megacity using mountaintop remote sensing observations. Remote Sensing of Environment, 2021, 259, 112351.	4.6	6
105	Source decomposition of eddy-covariance CO₂ flux measurements for evaluating a high-resolution urban CO₂ emissions inventory. Environmental Research Letters, 2022, 17, 074035.	2.2	6
106	The influence of near-field fluxes on seasonal carbon dioxide enhancements: results from the Indianapolis Flux Experiment (INFLUX). Carbon Balance and Management, 2021, 16, 4.	1.4	4
107	Policy Update: Observing human CO₂emissions. Carbon Management, 2011, 2, 223-226.	1.2	2
108	REDD+ and climate: thinking beyond carbon. Carbon Management, 2012, 3, 457-466.	1.2	2

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109	Crowdsourcing Power Plant Carbon Dioxide Emissions Data. Eos, 2013, 94, 385-386.	0.1	2
110	The power and promise of improved climate data infrastructure. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	2
111	Comment on â€œAnalysis of Highâ€•Resolution Utility Data for Understanding Energy Use in Urban Systemsâ€• Journal of Industrial Ecology, 2016, 20, 192-193.	2.8	1
112	Optimizing the Spatial Resolution for Urban CO2 Flux Studies Using the Shannon Entropy. Atmosphere, 2017, 8, 90.	1.0	1
113	Second letter to editor in response to author response published in <i>J. Air Waste Manage. Assoc</i>. 64: 1218â€"1220. Journal of the Air and Waste Management Association, 2015, 65, 245-246.	0.9	0
114	Fluxes of Atmospheric Greenhouse-Gases in Maryland (FLAGG-MD): Emissions of Carbon Dioxide in the Baltimore, MD-Washington, D.C. area. Journal of Geophysical Research D: Atmospheres, 2020, 125, .	1.2	0
115	A spatially explicit inventory scaling approach to estimate urban CO2 emissions. Elementa, 2022, 10, .	1.1	0