

Steven C Wofsy

List of Publications by Year in descending order

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105
papers

16,088
citations

23302

58
h-index

24106

111
g-index

117
all docs

117
docs citations

117
times ranked

16051
citing authors

#	ARTICLE	IF	CITATIONS
1	Measurements of carbon sequestration by long-term eddy covariance: methods and a critical evaluation of accuracy. <i>Global Change Biology</i> , 1996, 2, 169-182.	9.7	1,258
2	The FLUXNET2015 dataset and the ONEFlux processing pipeline for eddy covariance data. <i>Scientific Data</i> , 2020, 7, 225.	5.4	720
3	Sensitivity of Boreal Forest Carbon Balance to Soil Thaw. <i>Science</i> , 1998, 279, 214-217.	20.9	711
4	Factors Controlling Long- and Short-Term Sequestration of Atmospheric CO ₂ in a Mid-latitude Forest. <i>Science</i> , 2001, 294, 1688-1691.	20.9	525
5	Modelling the soil-plant-atmosphere continuum in a <i>Quercus-Acer</i> stand at Harvard Forest: the regulation of stomatal conductance by light, nitrogen and soil/plant hydraulic properties. <i>Plant, Cell and Environment</i> , 1996, 19, 911-927.	6.0	514
6	A near-field tool for simulating the upstream influence of atmospheric observations: The Stochastic Time-Inverted Lagrangian Transport (STILT) model. <i>Journal of Geophysical Research</i> , 2003, 108, ACH 2-1-ACH 2-17.	3.3	442
7	The terrestrial biosphere as a net source of greenhouse gases to the atmosphere. <i>Nature</i> , 2016, 531, 225-228.	36.2	427
8	Mechanistic scaling of ecosystem function and dynamics in space and time: Ecosystem Demography model version 2. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	405
9	HIAPER Pole-to-Pole Observations (HIPPO): fine-grained, global-scale measurements of climatically important atmospheric gases and aerosols. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2011, 369, 2073-2086.	3.5	357
10	Precision requirements for space-based data. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	330
11	A cross-biome comparison of daily light use efficiency for gross primary production. <i>Global Change Biology</i> , 2003, 9, 383-395.	9.7	300
12	Cold season emissions dominate the Arctic tundra methane budget. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 40-45.	7.6	291
13	Site-level evaluation of satellite-based global terrestrial gross primary production and net primary production monitoring. <i>Global Change Biology</i> , 2005, 11, 666-684.	9.7	288
14	On the use of MODIS EVI to assess gross primary productivity of North American ecosystems. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	275
15	A satellite-based biosphere parameterization for net ecosystem CO ₂ exchange: Vegetation Photosynthesis and Respiration Model (VPRM). <i>Global Biogeochemical Cycles</i> , 2008, 22, .	4.8	262
16	How climate and vegetation type influence evapotranspiration and water use efficiency in Canadian forest, peatland and grassland ecosystems. <i>Agricultural and Forest Meteorology</i> , 2012, 153, 14-30.	4.8	238
17	Methane emissions from natural gas infrastructure and use in the urban region of Boston, Massachusetts. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 1941-1946.	7.6	232
18	Atmospheric CH ₄ in the first decade of the 21st century: Inverse modeling analysis using SCIAMACHY satellite retrievals and NOAA surface measurements. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 7350-7369.	3.3	229

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19	Seasonal controls on the exchange of carbon and water in an Amazonian rain forest. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	206
20	Seasonality of temperate forest photosynthesis and daytime respiration. <i>Nature</i> , 2016, 534, 680-683.	36.2	206
21	Comparison of carbon dioxide fluxes over three boreal black spruce forests in Canada. <i>Global Change Biology</i> , 2007, 13, 89-107.	9.7	200
22	Toward constraining regional-scale fluxes of CO ₂ with atmospheric observations over a continent: 2. Analysis of COBRA data using a receptor-oriented framework. <i>Journal of Geophysical Research</i> , 2003, 108, n/a-n/a.	3.3	197
23	Global methane and nitrous oxide emissions from terrestrial ecosystems due to multiple environmental changes. <i>Ecosystem Health and Sustainability</i> , 2015, 1, 1-20.	3.4	192
24	Uncertainties in, and interpretation of, carbon flux estimates using the eddy covariance technique. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	190
25	Toward constraining regional-scale fluxes of CO ₂ with atmospheric observations over a continent: 1. Observed spatial variability from airborne platforms. <i>Journal of Geophysical Research</i> , 2003, 108, n/a-n/a.	3.3	175
26	Quantifying sources of methane using light alkanes in the Los Angeles basin, California. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 4974-4990.	3.3	170
27	Coupled weather research and forecastingâ€™ stochastic time-inverted lagrangian transport (WRFâ€™STILT) model. <i>Meteorology and Atmospheric Physics</i> , 2010, 107, 51-64.	2.0	160
28	Carbon dioxide sources from Alaska driven by increasing early winter respiration from Arctic tundra. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 5361-5366.	7.6	160
29	Emissions of CH ₄ and N ₂ O over the United States and Canada based on a receptor-oriented modeling framework and COBRAâ€™NA atmospheric observations. <i>Geophysical Research Letters</i> , 2008, 35, .	4.0	133
30	Antarctic O ₃ : Chemical mechanisms for the spring decrease. <i>Geophysical Research Letters</i> , 1986, 13, 1296-1299.	4.0	127
31	Atmospheric observations of Arctic Ocean methane emissions up to 82° north. <i>Nature Geoscience</i> , 2012, 5, 318-321.	11.9	127
32	Observational evidence for interhemispheric hydroxyl-radical parity. <i>Nature</i> , 2014, 513, 219-223.	36.2	127
33	Validation of MOPITT Version 5 thermalâ€™infrared, nearâ€™infrared, and multispectral carbon monoxide profile retrievals for 2000â€™2011. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 6710-6725.	3.3	125
34	The effects of biomass burning aerosols and clouds on the CO ₂ flux in Amazonia. <i>Tellus, Series B: Chemical and Physical Meteorology</i> , 2007, 59, 338-349.	1.6	122
35	A large increase in U.S. methane emissions over the past decade inferred from satellite data and surface observations. <i>Geophysical Research Letters</i> , 2016, 43, 2218-2224.	4.0	121
36	Anthropogenic and biogenic CO ₂ fluxes in the Boston urban region. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 7491-7496.	7.6	116

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37	Increasing contribution of peatlands to boreal evapotranspiration in a warming climate. <i>Nature Climate Change</i> , 2020, 10, 555-560.	14.3	114
38	Environmental controls on the photosynthesis and respiration of a boreal lichen woodland: a growing season of whole-ecosystem exchange measurements by eddy correlation. <i>Oecologia</i> , 1995, 102, 443-452.	2.1	112
39	North American terrestrial CO ₂ uptake largely offset by CH ₄ and N ₂ O emissions: toward a full accounting of the greenhouse gas budget. <i>Climatic Change</i> , 2015, 129, 413-426.	3.7	112
40	Climatic variability and vegetation vulnerability in Amazonia. <i>Geophysical Research Letters</i> , 2005, 32, .	4.0	100
41	Latitudinal patterns of magnitude and interannual variability in net ecosystem exchange regulated by biological and environmental variables. <i>Global Change Biology</i> , 2009, 15, 2905-2920.	9.7	98
42	Soil respiration in a northeastern US temperate forest: a 22-year synthesis. <i>Ecosphere</i> , 2013, 4, 1-28.	2.2	86
43	Denitrification in the Antarctic stratosphere. <i>Nature</i> , 1989, 339, 525-527.	36.2	82
44	Global atmospheric CO ₂ inverse models converging on neutral tropical land exchange, but disagreeing on fossil fuel and atmospheric growth rate. <i>Biogeosciences</i> , 2019, 16, 117-134.	3.4	81
45	Tropospheric distribution and variability of N ₂ O: Evidence for strong tropical emissions. <i>Geophysical Research Letters</i> , 2011, 38, .	4.0	78
46	Satellite-based survey of extreme methane emissions in the Permian basin. <i>Science Advances</i> , 2021, 7, .	10.9	78
47	Evaluation of the airborne quantum cascade laser spectrometer (QCLS) measurements of the carbon and greenhouse gas suite "CO ₂ , CH ₄ , N ₂ O, and CO" during the CalNex and HIPPO campaigns. <i>Atmospheric Measurement Techniques</i> . 2014, 7, 1509-1526.	3.1	76
48	Measuring fluxes of trace gases at regional scales by Lagrangian observations: Application to the CO ₂ Budget and Rectification Airborne (COBRA) study. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	75
49	Carbon budget of the Harvard Forest Long-Term Ecological Research site: pattern, process, and response to global change. <i>Ecological Monographs</i> , 2020, 90, e01423.	5.4	75
50	Fluxes of nitrogen oxides over a temperate deciduous forest. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	73
51	Seasonal fluxes of carbonyl sulfide in a midlatitude forest. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 14162-14167.	7.6	72
52	Estimating regional carbon exchange in New England and Quebec by combining atmospheric, ground-based and satellite data. <i>Tellus, Series B: Chemical and Physical Meteorology</i> , 2006, 58, 344-358.	1.6	70
53	A High-Precision Fast-Response Airborne CO ₂ Analyzer for In Situ Sampling from the Surface to the Middle Stratosphere. <i>Journal of Atmospheric and Oceanic Technology</i> , 2002, 19, 1532-1543.	1.1	70
54	Global emissions of refrigerants HCFC-22 and HFC-134a: Unforeseen seasonal contributions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 17379-17384.	7.6	68

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55	Loss of ozone in the Arctic vortex for the winter of 1989. <i>Geophysical Research Letters</i> , 1990, 17, 561-564.	4.0	66
56	Interannual, seasonal, and diel variation in soil respiration relative to ecosystem respiration at a wetland to upland slope at Harvard Forest. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	59
57	Methane emissions from Alaska in 2012 from CARVE airborne observations. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 16694-16699.	7.6	58
58	Large contribution of biomass burning emissions to ozone throughout the global remote troposphere. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.6	58
59	Severe chemical ozone loss inside the Arctic Polar Vortex during winter 1999-2000 Inferred from in situ airborne measurements. <i>Geophysical Research Letters</i> , 2001, 28, 2197-2200.	4.0	57
60	Simultaneous measurements of atmospheric HONO and NO ₂ via absorption spectroscopy using tunable mid-infrared continuous-wave quantum cascade lasers. <i>Applied Physics B: Lasers and Optics</i> , 2011, 102, 417-423.	2.1	57
61	Radon fluxes in tropical forest ecosystems of Brazilian Amazonia: night-time CO ₂ net ecosystem exchange derived from radon and eddy covariance methods. <i>Global Change Biology</i> , 2004, 10, 618-629.	9.7	53
62	Airborne observations of methane emissions from rice cultivation in the Sacramento Valley of California. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	50
63	Measurements of stratospheric carbon dioxide and water vapor at northern midlatitudes: Implications for troposphere-to-stratosphere transport. <i>Geophysical Research Letters</i> , 1995, 22, 2737-2740.	4.0	45
64	Attributing uncertainties in simulated biospheric carbon fluxes to different error sources. <i>Global Biogeochemical Cycles</i> , 2011, 25, n/a-n/a.	4.8	43
65	The Global Budget of Atmospheric Methanol: New Constraints on Secondary, Oceanic, and Terrestrial Sources. <i>Journal of Geophysical Research D: Atmospheres</i> , 2021, 126, e2020JD033439.	3.3	43
66	Atmospheric Acetaldehyde: Importance of Air-Sea Exchange and a Missing Source in the Remote Troposphere. <i>Geophysical Research Letters</i> , 2019, 46, 5601-5613.	4.0	42
67	Continuing global significance of emissions of Montreal Protocol-restricted halocarbons in the United States and Canada. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	41
68	Contemporary and projected biogenic fluxes of methane and nitrous oxide in North American terrestrial ecosystems. <i>Frontiers in Ecology and the Environment</i> , 2012, 10, 528-536.	2.9	41
69	Title is missing!. <i>Plant and Soil</i> , 2002, 242, 15-32.	3.7	40
70	Estimating photosynthetic ¹³ C discrimination in terrestrial CO ₂ exchange from canopy to regional scales. <i>Global Biogeochemical Cycles</i> , 2004, 18, n/a-n/a.	4.8	39
71	Majority of US urban natural gas emissions unaccounted for in inventories. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.6	39
72	A multiyear estimate of methane fluxes in Alaska from CARVE atmospheric observations. <i>Global Biogeochemical Cycles</i> , 2016, 30, 1441-1453.	4.8	38

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73	Influence of polar stratospheric clouds on the depletion of Antarctic ozone. <i>Geophysical Research Letters</i> , 1988, 15, 871-874.	4.0	35
74	Detecting regional patterns of changing CO ₂ flux in Alaska. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 7733-7738.	7.6	35
75	Modeling the carbon balance of Amazonian rain forests: resolving ecological controls on net ecosystem productivity. <i>Ecological Monographs</i> , 2009, 79, 445-463.	5.4	34
76	Modeling analysis of primary controls on net ecosystem productivity of seven boreal and temperate coniferous forests across a continental transect. <i>Global Change Biology</i> , 2008, 14, 1765-1784.	9.7	33
77	What have we learned from intensive atmospheric sampling field programmes of CO ₂ ?. <i>Tellus, Series B: Chemical and Physical Meteorology</i> , 2006, 58, 331-343.	1.6	31
78	Anthropogenic emissions of nonmethane hydrocarbons in the northeastern United States: Measured seasonal variations from 1992–1996 and 1999–2001. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	29
79	Mass fluxes and isofluxes of methane (CH ₄) at a New Hampshire fen measured by a continuous wave quantum cascade laser spectrometer. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	28
80	A Chemical Survey of the Mississippi Estuary. <i>Estuaries and Coasts</i> , 1987, 10, 1.	1.6	27
81	An empirical analysis of the spatial variability of atmospheric CO ₂ : Implications for inverse analyses and space-borne sensors. <i>Geophysical Research Letters</i> , 2004, 31, .	4.0	27
82	The CO ₂ budget and rectification airborne study: Strategies for measuring rectifiers and regional fluxes. <i>Geophysical Monograph Series</i> , 2000, , 311-324.	0.0	25
83	Nitrous oxide (N ₂ O) emissions from California based on 2010 CalNex airborne measurements. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 2809-2820.	3.3	25
84	Earlier snowmelt may lead to late season declines in plant productivity and carbon sequestration in Arctic tundra ecosystems. <i>Scientific Reports</i> , 2022, 12, 3986.	3.4	22
85	Atmospheric constraints on 2004 emissions of methane and nitrous oxide in North America from atmospheric measurements and a receptor-oriented modeling framework. <i>Journal of Integrative Environmental Sciences</i> , 2010, 7, 125-133.	2.6	20
86	Carbonyl sulfide in the planetary boundary layer: Coastal and continental influences. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 8001-8009.	3.3	20
87	Global Atmospheric Budget of Acetone: Air–Sea Exchange and the Contribution to Hydroxyl Radicals. <i>Journal of Geophysical Research D: Atmospheres</i> , 2020, 125, e2020JD032553.	3.3	20
88	Reevaluating the Use of O ₂ Å ¹ g Band in Spaceborne Remote Sensing of Greenhouse Gases. <i>Geophysical Research Letters</i> , 2018, 45, 5779-5787.	4.0	19
89	Ecosystem fluxes of hydrogen in a mid-latitude forest driven by soil microorganisms and plants. <i>Global Change Biology</i> , 2017, 23, 906-919.	9.7	15
90	Effects of Oblique Wave Normal Angle and Noncircular Polarization of Electromagnetic Ion Cyclotron Waves on the Pitch Angle Scattering of Relativistic Electrons. <i>Journal of Geophysical Research: Space Physics</i> , 2018, 123, 4556-4573.	2.4	14

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91	“Designing Lagrangian experiments to measure regional-scale trace gas fluxes”. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	13
92	Chemical evidence of inter-hemispheric air mass intrusion into the Northern Hemisphere mid-latitudes. <i>Scientific Reports</i> , 2018, 8, 4669.	3.4	12
93	Spectral calibration of the MethaneAIR instrument. <i>Atmospheric Measurement Techniques</i> , 2021, 14, 3737-3753.	3.1	12
94	Comparison of upper tropospheric carbon monoxide from MOPITT, ACE-FTS, and HIPPO-QCLS. <i>Journal of Geophysical Research D: Atmospheres</i> , 2014, 119, 14,144.	3.3	10
95	Pyrocumulonimbus affect average stratospheric aerosol composition. <i>Science</i> , 2023, 379, 815-820.	20.9	10
96	Effects of atmospheric transport on column abundances of nitrogen and chlorine compounds in the Arctic stratosphere. <i>Geophysical Research Letters</i> , 1990, 17, 533-536.	4.0	9
97	Evidence for an Oceanic Source of Methyl Ethyl Ketone to the Atmosphere. <i>Geophysical Research Letters</i> , 2020, 47, e2019GL086045.	4.0	8
98	A multi-city urban atmospheric greenhouse gas measurement data synthesis. <i>Scientific Data</i> , 2022, 9, .	5.4	8
99	Using Lidar Technology To Assess Urban Air Pollution and Improve Estimates of Greenhouse Gas Emissions in Boston. <i>Environmental Science & Technology</i> , 2019, 53, 8957-8966.	10.5	7
100	Atmospheric Chemistry and Global Change. <i>Eos</i> , 1999, 80, 468.	0.1	4
101	Listening to the Forest: An Artificial Neural Network-Based Model of Carbon Uptake at Harvard Forest. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2019, 124, 461-478.	3.0	4
102	Atmospheric mercury sources in a coastal-urban environment: a case study in Boston, Massachusetts, USA. <i>Environmental Sciences: Processes and Impacts</i> , 2021, 23, 1914-1929.	3.4	2
103	An optimal estimation-based retrieval of upper atmospheric oxygen airglow and temperature from SCIAMACHY limb observations. <i>Atmospheric Measurement Techniques</i> , 2022, 15, 3721-3745.	3.1	1
104	Neutral Tropical African CO ₂ Exchange Estimated From Aircraft and Satellite Observations. <i>Global Biogeochemical Cycles</i> , 2023, 37, .	4.8	1
105	Sensitive Response of Atmospheric Oxidative Capacity to the Uncertainty in the Emissions of Nitric Oxide (NO) From Soils in Amazonia. <i>Geophysical Research Letters</i> , 2024, 51, .	4.0	0