**Colm Sweeney, Ph.D.**

NOAA

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**EDUCATION:**

Ph.D. 2000 Chemical Oceanography, **Columbia University**, New York, NY

M. S. 1996 Geology, **Columbia University**, New York, NY

B. A. 1988 Chemistry, **Bowdoin College,** Brunswick, ME

**AREAS OF INTEREST:**

* Atmospheric and ocean measurement technology development
* Feedbacks of high latitude ocean and land biosphere on climate change
* Emission verification using atmospheric measurements at global, regional and local scales
* Constraining the changes in natural carbon cycle through atmospheric and ocean observations of CO2, CH4 and other trace gases
* Air-sea gas exchange of CO2

**PROFESSIONAL ACTIVITY:**

2/2020 – Present **Associate Director,** Global Monitoring Laboratory (GML), National Oceanic and Atmospheric Administration (NOAA), Earth System Research Laboratory (ESRL)**,** Boulder, CO

8/2019 – 12/2019 **Acting Deputy Director,** Global Ocean Monitoring and Observation (GOMO) Program, NOAA,Silver Spring, CO

1/2018 – Present **Physical Scientist,** GML, NOAA,Boulder, CO

6/2016 – 1/2018 **Senior Research Scientist**, Cooperative Institute for Research in Earth Sciences (CIRES), University of Colorado, Boulder, CO

6/2010 – 6/2016 **Research Scientist III**, CIRES, University of Colorado, Boulder, CO

4/2005 – 6/2010 **Research Scientist II,** CIRES, University of Colorado, Boulder, CO

4/2002 – 4/2005 **Research Staff Member**, Princeton University,Princeton, NJ

4/2002 – Present **Adjunct Assistant Research Scientist,** Lamont-Doherty Earth Observatory of Columbia University, Palisades, NY

9/2000 – 4/2002 **Postdoctoral Research Scientist,** Lamont-Doherty Earth Observatory of Columbia University, Palisades, NY

9/2000 – 12/2000 **Lecturer**, Barnard College, New York, NY

9/1994 – 9/2000 **Doctoral Student,** Lamont-Doherty Earth Observatory of Columbia University, Palisades, NY

6/1992 – 7/1994 **Research Assistant**, Woods Hole Oceanographic Institute, Woods Hole, MA.

9/1989 – 1/1992 **Peace Corps Volunteer**, Peace Corps Nepal, Bardia District, Nepal

9/1988 – 6/1989 **Chemistry Teacher,** Proctor Academy, Andover, NH

# AWARDS

2018 – 2020 Top 10 most highly cited (top 0.1% in field) NOAA researchers by *Clarivate Analytics*

2015 CIRES Technology Transfer award for AirCore measurements.

2012 CIRES Science and Engineering award for AirCore development.

2008 NOAA Outstanding Paper Award

2002 **National Research Council Fellowship** (Declined award)

1999 **Bruce Heezen Award.** Awarded for excellence in graduate student research by the Earth and Environmental Science Department, Columbia University.

1998 – 2000 **NASA Global Change Fellowship.** Three-year fellowship awarded by NASA for graduate student research in global climate change.

1997 **The Sarah Langer Prize.**  Book award for the student who contributes most to student life.

1994 – 1998 **Columbia University Graduate School Fellowship.** Five-year fellowship awarded for the study of Chemical Oceanography.

# PROFESSIONAL ACTIVITIES

2021 – Present NOAA/OAR Earth System Science and Modeling Council– Member

2021 – Present Carbon Dioxide Removal Task Force – Co Chair

2020 – Present Carbon Cycle Interagency Working Group - Member

2018 – 2020 MEthane goes MObile – MEasurements and Modelling (MEMO2) Advisor

2018 IPCC reviewer

2000 – Present Journal reviewer (Nature, Science, AGU atmosphere and ocean journals, Deep Sea Research)

2000 – Present NSF, NOAA, NASA Proposal Review Panel Member

2013-2015 NASA Arctic Boreal Vulnerability Experiment (ABOVE)

2010 U.S. National Academy of Sciences advisor for “Frontiers in Understanding Climate Change and Polar Ecosystems”

2007 IPCC contributing author

2003 – 2008 Antarctic Research Vessel Oversight Committee

2003 – 2017 NSF, NOAA, NASA Proposal Review Panel Member

2000 – 2001 NOAA Carbon Observations Planning Group

1997 – 2000 Columbia University Senate Education Committee member

# PUBLICATIONS as of May 2021 (Total papers = 201, H-index = 70, citations = 21,500 Google Scholar)

**2021**

Davis, K. J., E. V. Browell, S. Feng, T. Lauvaux, M. D. Obland, S. Pal, B. C. Baier, et al. (2021), The Atmospheric Carbon and Transport (ACT) – America Mission, *Bulletin of the American Meteorological Society*, 1-54, doi:10.1175/bams-d-20-0300.1.

Eckl, M., A. Roiger, J. Kostinek, A. Fiehn, H. Huntrieser, C. Knote, Z. R. Barkley, S. M. Ogle, B. C. Baier, C. Sweeney, and K. J. Davis (2021), Quantifying Nitrous Oxide Emissions in the U.S. Midwest: A Top-Down Study Using High Resolution Airborne In-Situ Observations, *Geophysical Research Letters*, *48*(5), e2020GL091266, doi:https://doi.org/10.1029/2020GL091266.

Floerchinger, C., P. B. Shepson, K. Hajny, B. C. Daube, B. H. Stirm, C. Sweeney, and S. C. Wofsy (2021), Relative flux measurements of biogenic and natural gas-derived methane for seven U.S. cities, *Elementa: Science of the Anthropocene*, *9*(1), doi:10.1525/elementa.2021.000119.

Kulawik, S. S., J. R. Worden, V. H. Payne, D. Fu, S. C. Wofsy, K. McKain, C. Sweeney, B. C. Daube Jr, A. Lipton, I. Polonsky, Y. He, K. E. Cady-Pereira, E. J. Dlugokencky, D. J. Jacob, and Y. Yin (2021), Evaluation of single-footprint AIRS CH4 profile retrieval uncertainties using aircraft profile measurements, Atmos. Meas. Tech., 14(1), 335-354, doi:10.5194/amt-14-335-2021.

Liu, J., L. Baskaran, K. Bowman, D. Schimel, A. A. Bloom, N. C. Parazoo, T. Oda, D. Carroll, D. Menemenlis, J. Joiner, R. Commane, B. Daube, L. V. Gatti, K. McKain, J. Miller, B. B. Stephens, C. Sweeney, and S. Wofsy (2021), Carbon Monitoring System Flux Net Biosphere Exchange 2020 (CMS-Flux NBE 2020), Earth Syst. Sci. Data, 13(2), 299-330, doi:10.5194/essd-13-299-2021.

Maksyutov, S., T. Oda, M. Saito, R. Janardanan, D. Belikov, J. W. Kaiser, R. Zhuravlev, A. Ganshin, V. K. Valsala, A. Andrews, L. Chmura, E. Dlugokencky, L. Haszpra, R. L. Langenfelds, T. Machida, T. Nakazawa, M. Ramonet, C. Sweeney, and D. Worthy (2021), Technical note: A high-resolution inverse modelling technique for estimating surface CO2 fluxes based on the NIES-TM–FLEXPART coupled transport model and its adjoint, Atmos. Ch*em. Phys.*, *21*(2), 1245-1266, doi:10.5194/acp-21-1245-2021.

Roche, S., K. Strong, D. Wunch, J. Mendonca, C. Sweeney, B. Baier, S. C. Biraud, J. L. Laughner, G. C. Toon, and B. J. Connor (2021), Retrieval of atmospheric CO2 vertical profiles from ground-based near-infrared spectra, Atmos. Meas. Tech., 14(4), 3087-3118, doi:10.5194/amt-14-3087-2021.

**2020**

Baier, B. C., C. Sweeney, Y. Choi, K. J. Davis, J. P. DiGangi, S. Feng, A. Fried, H. Halliday, J. Higgs, T. Lauvaux, B. R. Miller, S. A. Montzka, T. Newberger, J. B. Nowak, P. Patra, D. Richter, J. Walega, and P. Weibring (2020), Multispecies Assessment of Factors Influencing Regional CO2 and CH4 Enhancements During the Winter 2017 ACT-America Campaign, Journal of Geophysical Research-Atmospheres, 125(2), doi:10.1029/2019jd031339.

Basu, S., Lehman, S. J., Miller, J. B., Andrews, A. E., Sweeney, C., Gurney, K. R., Xu, X., Southon, J., and Tans, P. P.: Estimating US fossil fuel CO2 emissions from measurements of 14C in atmospheric CO2, Proceedings of the National Academy of Sciences, 117, 13300-13307, 10.1073/pnas.1919032117, 2020.

Bourgeois, I., Peischl, J., Thompson, C. R., Aikin, K. C., Campos, T., Clark, H., Commane, R., Daube, B., Diskin, G. W., Elkins, J. W., Gao, R. S., Gaudel, A., Hintsa, E. J., Johnson, B. J., Kivi, R., McKain, K., Moore, F. L., Parrish, D. D., Querel, R., Ray, E., Sánchez, R., Sweeney, C., Tarasick, D. W., Thompson, A. M., Thouret, V., Witte, J. C., Wofsy, S. C., and Ryerson, T. B.: Global-scale distribution of ozone in the remote troposphere from ATom and HIPPO airborne field missions, Atmos. Chem. Phys. Discuss., 2020, 1-52, 10.5194/acp-2020-315, 2020.

Brune, W. H., D. O. Miller, A. B. Thames, H. M. Allen, E. C. Apel, D. R. Blake, T. P. Bui, et al. (2020), Exploring Oxidation in the Remote Free Troposphere: Insights From Atmospheric Tomography (ATom), Journal of Geophysical Research-Atmospheres, 125(1), doi:10.1029/2019jd031685.

Kulawik, S. S., Worden, J. R., Payne, V. H., Fu, D., Wofsy, S. C., McKain, K., Sweeney, C., Daube Jr, B. C., Lipton, A., Polonsky, I., He, Y., Cady-Pereira, K. E., Dlugokencky, E. J., Jacob, D. J., and Yin, Y.: Evaluation of single-footprint AIRS CH4 Profile Retrieval Uncertainties Using Aircraft Profile Measurements, Atmos. Meas. Tech. Discuss., 2020, 1-36, 10.5194/amt-2020-145, 2020.

Liu, J., Baskaran, L., Bowman, K., Schimel, D., Bloom, A. A., Parazoo, N. C., Oda, T., Carroll, D., Menemenlis, D., Joiner, J., Commane, R., Daube, B., Gatii, L. V., McKain, K., Miller, J., Stephens, B. B., Sweeney, C., and Wofsy, S.: Carbon Monitoring System Flux Net Biosphere Exchange 2020 (CMS-Flux NBE 2020), Earth Syst. Sci. Data Discuss., 2020, 1-53, 10.5194/essd-2020-123, 2020.

Lin, X., Rogers, B. M., Sweeney, C., Chevallier, F., Arshinov, M., Dlugokencky, E., Machida, T., Sasakawa, M., Tans, P., and Keppel-Aleks, G.: Siberian and temperate ecosystems shape Northern Hemisphere atmospheric CO2 seasonal amplification, Proceedings of the National Academy of Sciences, 117, 21079-21087, 10.1073/pnas.1914135117, 2020.

Laube, J. C., Elvidge, E. C. L., Adcock, K. E., Baier, B., Brenninkmeijer, C. A. M., Chen, H., Droste, E. S., Grooß, J. U., Heikkinen, P., Hind, A. J., Kivi, R., Lojko, A., Montzka, S. A., Oram, D. E., Randall, S., Röckmann, T., Sturges, W. T., Sweeney, C., Thomas, M., Tuffnell, E., and Ploeger, F.: Investigating stratospheric changes between 2009 and 2018 with halogenated trace gas data from aircraft, AirCores, and a global model focusing on CFC-11, Atmos. Chem. Phys., 20, 9771-9782, 10.5194/acp-20-9771-2020, 2020.

Maksyutov, S., Oda, T., Saito, M., Janardanan, R., Belikov, D., Kaiser, J. W., Zhuravlev, R., Ganshin, A., Valsala, V. K., Andrews, A., Chmura, L., Dlugokencky, E., Haszpra, L., Langenfelds, R. L., Machida, T., Nakazawa, T., Ramonet, M., Sweeney, C., and Worthy, D.: Technical note: A high-resolution inverse modelling technique for estimating surface CO2 fluxes based on the NIES-TM - FLEXPART coupled transport model and its adjoint, Atmos. Chem. Phys. Discuss., 2020, 1-33, 10.5194/acp-2020-251, 2020.

Pétron, G., B. Miller, B. Vaughn, E. Thorley, J. Kofler, I. Mielke-Maday, O. Sherwood, et al. (2020), Investigating large methane enhancements in the U.S. San Juan Basin, Elementa: Science of the Anthropocene, 8(1), doi:10.1525/elementa.038.

Sweeney, C., R. Bogue, A. Chatterjee, S. Wolter, K. McKain, T. Newberger, L. Ott, B. Poulter, B. Weir, Z. Zhang, and C. E. Miller (2020), Atmospheric carbon cycle dynamics over the ABoVE domain: an integrated analysis using aircraft observations (Arctic-CAP) and model simulations (GEOS), Environmental Research Letters. Submitted

Thames, A. B., Brune, W. H., Miller, D. O., Allen, H. M., Apel, E. C., Blake, D. R., Bui, T. P., Commane, R., Crounse, J. D., Daube, B. C., Diskin, G. S., DiGangi, J. P., Elkins, J. W., Hall, S. R., Hanisco, T. F., Hannun, R. A., Hintsa, E., Hornbrook, R. S., Kim, M. J., McKain, K., Moore, F. L., Nicely, J. M., Peischl, J., Ryerson, T. B., St. Clair, J. M., Sweeney, C., Teng, A., Thompson, C. R., Ullmann, K., Wennberg, P. O., and Wolfe, G. M.: Missing OH reactivity in the global marine boundary layer, Atmos. Chem. Phys., 20, 4013-4029, 10.5194/acp-20-4013-2020, 2020..

Wang, S., Apel, E. C., Schwantes, R. H., Bates, K. H., Jacob, D. J., Fischer, E. V., Hornbrook, R. S., Hills, A. J., Emmons, L. K., Pan, L. L., Honomichl, S., Tilmes, S., Lamarque, J.-F., Yang, M., Marandino, C. A., Saltzman, E. S., de Bruyn, W., Kameyama, S., Tanimoto, H., Omori, Y., Hall, S. R., Ullmann, K., Ryerson, T. B., Thompson, C. R., Peischl, J., Daube, B. C., Commane, R., McKain, K., Sweeney, C., Thames, A. B., Miller, D. O., Brune, W. H., Diskin, G. S., DiGangi, J. P., and Wofsy, S. C.: Global Atmospheric Budget of Acetone: Air-Sea Exchange and the Contribution to Hydroxyl Radicals, Journal of Geophysical Research: Atmospheres, 125, e2020JD032553, 10.1029/2020jd032553, 2020.

Weibring, P., D. Richter, J. G. Walega, A. Fried, J. DiGangi, H. Halliday, Y. Choi, B. Baier, C. Sweeney, B. Miller, K. J. Davis, Z. Barkley, and M. D. Obland (2020), Autonomous airborne mid-infrared spectrometer for high-precision measurements of ethane during the NASA ACT-America studies, *Atmos. Meas. Tech.*, *13*(11), 6095-6112, doi:10.5194/amt-13-6095-2020.

Wiggins, E. B., Andrews, A., Sweeney, C., Miller, J. B., Miller, C. E., Veraverbeke, S., Commane, R., Wofsy, S., Henderson, J. M., and Randerson, J. T.: Evidence for a larger contribution of smoldering combustion to boreal forest fire emissions from tower observations in Alaska, Atmos. Chem. Phys. Discuss., 2020, 1-26, 10.5194/acp-2019-1067, 2020.

**2019**

Asher, E., R. S. Hornbrook, B. B. Stephens, D. Kinnison, E. J. Morgan, R. F. Keeling, E. L. Atlas, S. M. Schauffler, S. Tilmes, E. A. Kort, M. S. Hoecker-Martínez, M. C. Long, J. F. Lamarque, A. Saiz-Lopez, K. McKain, C. Sweeney, A. J. Hills, and E. C. Apel (2019), Novel approaches to improve estimates of short-lived halocarbon emissions during summer from the Southern Ocean using airborne observations, *Atmos. Chem. Phys.*, *19*(22), 14071-14090, doi:10.5194/acp-19-14071-2019.

Arndt, K. A., W. C. Oechel, J. P. Goodrich, B. A. Bailey, A. Kalhori, J. Hashemi, C. Sweeney, and D. Zona (2019), Sensitivity of methane emissions to later soil freezing in Arctic tundra ecosystems, Journal of Geophysical Research: Biogeosciences.

Brown, M. S., D. R. Munro, C. J. Feehan, C. Sweeney, H. W. Ducklow, and O. M. Schofield (2019), Enhanced oceanic CO 2 uptake along the rapidly changing West Antarctic Peninsula, Nature, Revision.

Crowell, S., D. Baker, A. Schuh, S. Basu, A. R. Jacobson, F. Chevallier, J. Liu, F. Deng, L. Feng, and K. McKain (2019), The 2015–2016 carbon cycle as seen from OCO-2 and the global in situ network, Atmospheric Chemistry and Physics, 19(15), 9797-9831.

Floerchinger, C., K. McKain, T. Bonin, J. Peischl, S. C. Biraud, C. Miller, T. B. Ryerson, S. C. Wofsy, and C. Sweeney (2019), Methane emissions from oil and gas production on the North Slope of Alaska, *Atmospheric Environment*, *218*, 116985, doi:https://doi.org/10.1016/j.atmosenv.2019.116985.

Freeman, N. M., D. R. Munro, J. Sprintall, M. R. Mazloff, S. Purkey, I. Rosso, C. A. DeRanek, and C. Sweeney (2019), The observed seasonal cycle of macronutrients in Drake Passage: relationship to fronts and utility as a model metric, Journal of Geophysical Research: Oceans, 124(7), 4763-4783.

Hedelius, J. K., T.-L. He, D. Jones, R. R. Buchholz, M. D. Mazière, N. M. Deutscher, M. K. Dubey, D. G. Feist, D. W. Griffith, and F. Hase (2019), Evaluation of MOPITT version 7 joint TIR-NIR XCO retrievals with TCCON, Atmospheric Measurement Techniques Discussions.

Hu, L., A. E. Andrews, K. W. Thoning, C. Sweeney, J. B. Miller, A. M. Michalak, E. Dlugokencky, P. P. Tans, Y. P. Shiga, and M. Mountain (2019), Enhanced North American carbon uptake associated with El Niño, Science advances, 5(6), eaaw0076.

Karion, A., T. Lauvaux, I. Lopez Coto, C. Sweeney, K. Mueller, S. Gourdji, W. Angevine, Z. Barkley, A. Deng, and A. Andrews (2019), Intercomparison of atmospheric trace gas dispersion models: Barnett Shale case study, Atmospheric Chemistry and Physics, 19(4), 2561-2576

Kostinek, J., A. Roiger, K. J. Davis, C. Sweeney, J. P. DiGangi, Y. Choi, B. Baier, F. Hase, J. Groß, and M. Eckl (2019), Adaptation and performance assessment of a quantum and interband cascade laser spectrometer for simultaneous airborne in situ observation of CH 4, C2H6, CO2, CO and N2O, Atmospheric Measurement Techniques, 12(3), 1767-1783.

Kulawik, S. S., S. Crowell, D. Baker, J. Liu, K. McKain, C. Sweeney, S. C. Biraud, et al. (2019), Characterization of OCO-2 and ACOS-GOSAT biases and errors for CO2 flux estimates, *Atmos. Meas. Tech. Discuss.*, *2019*, 1-61, doi:10.5194/

Lan, X., P. Tans, C. Sweeney, A. Andrews, E. Dlugokencky, S. Schwietzke, J. Kofler, K. McKain, K. Thoning, and M. Crotwell (2019), Long‐Term Measurements Show Little Evidence for Large Increases in Total US Methane Emissions Over the Past Decade, Geophysical Research Letters, 46(9), 4991-4999.

Morgan, E. J., B. B. Stephens, M. C. Long, R. F. Keeling, J. D. Bent, K. McKain, C. Sweeney, M. S. Hoecker-Martínez, and E. A. Kort (2019), Summertime Atmospheric Boundary Layer Gradients of O2 and CO2 over the Southern Ocean, *Journal of Geophysical Research: Atmospheres*, *n/a*(n/a), doi:10.1029/2019jd031479.

Plant, G., E. A. Kort, C. Floerchinger, A. Gvakharia, I. Vimont, and C. Sweeney (2019), Large fugitive methane emissions from urban centers along the US East Coast, Geophysical Research Letters, 46(14), 8500-8507.

Vimont, I. J., J. C. Turnbull, V. V. Petrenko, P. F. Place, C. Sweeney, N. Miles, S. Richardson, B. H. Vaughn, and J. W. White (2019), An improved estimate for the δ 13 C and δ 18 O signatures of carbon monoxide produced from atmospheric oxidation of volatile organic compounds, Atmospheric Chemistry and Physics, 19(13), 8547-8562.

Wiggins, E. B., A. Andrews, C. Sweeney, J. B. Miller, C. E. Miller, S. Veraverbeke, and J. T. Randerson (2019), Evidence for a larger contribution of smoldering combustion to boreal forest fire emissions from tower observations in Alaska, Revision.

Wang, S., D. Kinnison, S. A. Montzka, E. C. Apel, R. S. Hornbrook, A. J. Hills, D. R. Blake, B. Barletta, S. Meinardi, C. Sweeney, F. Moore, M. Long, A. Saiz-Lopez, R. P. Fernandez, S. Tilmes, L. K. Emmons, and J.-F. Lamarque (2019), Ocean Biogeochemistry Control on the Marine Emissions of Brominated Very Short-Lived Ozone-Depleting Substances: A Machine-Learning Approach, *Journal of Geophysical Research: Atmospheres*, *n/a*(n/a), doi:10.1029/2019jd031288.

Wolfe, G. M., J. M. Nicely, J. M. S. Clair, T. F. Hanisco, J. Liao, L. D. Oman, W. B. Brune, D. Miller, A. Thames, and G. G. Abad (2019), Mapping hydroxyl variability throughout the global remote troposphere via synthesis of airborne and satellite formaldehyde observations, Proceedings of the National Academy of Sciences, 116(23), 11171-11180.

**2018**

Alden, C. B., S. Ghosh, S. Coburn, C. Sweeney, A. Karion, R. Wright, I. Coddington, G. B. Rieker, and K. Prasad (2018), Bootstrap inversion technique for atmospheric trace gas source detection and quantification using long open-path laser measurements, *Atmos. Meas. Tech.*, *11*(3), 1565-1582, doi:10.5194/amt-11-1565-2018.

Alvarez, R. A., D. Zavala-Araiza, D. R. Lyon, D. T. Allen, Z. R. Barkley, A. R. Brandt, K. J. Davis, S. C. Herndon, D. J. Jacob, A. Karion, E. A. Kort, B. K. Lamb, T. Lauvaux, J. D. Maasakkers, A. J. Marchese, M. Omara, S. W. Pacala, J. Peischl, A. L. Robinson, P. B. Shepson, C. Sweeney, A. Townsend-Small, S. C. Wofsy, and S. P. Hamburg (2018), Assessment of methane emissions from the U.S. oil and gas supply chain, *Science*, *361*(6398), 186-188, doi:10.1126/science.aar7204.

Chen, Z., T. J. Griffis, J. M. Baker, D. B. Millet, J. D. Wood, E. J. Dlugokencky, A. E. Andrews, C. Sweeney, C. Hu, and R. K. Kolka (2018), Source Partitioning of Methane Emissions and its Seasonality in the U.S. Midwest, *Journal of Geophysical Research: Biogeosciences*, *123*(2), 646-659, doi:doi:10.1002/2017JG004356.

Coburn, S., C. B. Alden, R. Wright, K. Cossel, E. Baumann, G.-W. Truong, F. Giorgetta, C. Sweeney, N. R. Newbury, K. Prasad, I. Coddington, and G. B. Rieker (2018), Regional trace-gas source attribution using a field-deployed dual frequency comb spectrometer, *Optica*, *5*(4), 320-327, doi:10.1364/OPTICA.5.000320.

Desjardins, R. L., D. E. Worth, E. Pattey, A. VanderZaag, R. Srinivasan, M. Mauder, D. Worthy, C. Sweeney, and S. Metzger (2018), The challenge of reconciling bottom-up agricultural methane emissions inventories with top-down measurements, Agric. For. Meteorol., 248(Supplement C), 48-59.doi: 10.1016/j.agrformet.2017.09.003

Fay, A. R., N. S. Lovenduski, G. A. McKinley, D. R. Munro, C. Sweeney, A. R. Gray, P. Landschützer, B. B. Stephens, T. Takahashi, and N. Williams (2018), Utilizing the Drake Passage Time-series to understand variability and change in subpolar Southern Ocean pCO2, *Biogeosciences*, *15*, 3841 - 3855, doi:10.5194/bg-15-3841-2018.

Groot Zwaaftink, C. D., S. Henne, R. L. Thompson, E. J. Dlugokencky, T. Machida, J. D. Paris, M. Sasakawa, A. Segers, C. Sweeney, and A. Stohl (2018), Three-dimensional methane distribution simulated with FLEXPART 8-CTM-1.1 constrained with observation data, *Geosci. Model Dev.*, *11*(11), 4469-4487, doi:10.5194/gmd-11-4469-2018.

Hartery, S., R. Commane, J. Lindaas, C. Sweeney, J. Henderson, M. Mountain, N. Steiner, K. McDonald, S. J. Dinardo, C. E. Miller, S. C. Wofsy, and R. Y. W. Chang (2018), Estimating regional-scale methane flux and budgets using CARVE aircraft measurements over Alaska, *Atmos. Chem. Phys.*, *18*(1), 185-202, doi:10.5194/acp-18-185-2018.

He, W., I. R. Velde, A. E. Andrews, C. Sweeney, J. Miller, P. Tans, I. T. Laan-Luijkx, T. Nehrkorn, M. Mountain, W. Ju, W. Peters, and H. Chen (2018), CTDAS-Lagrange v1. 0: A high-resolution data assimilation system for regional carbon dioxide observations, *Geoscientific Model Development*, *11*(8), 3515-3536, doi:10.5194/gmd-11-3515-2018.

Jeong, S.-J., A. A. Bloom, D. Schimel, C. Sweeney, N. C. Parazoo, D. Medvigy, G. Schaepman-Strub, C. Zheng, C. R. Schwalm, D. N. Huntzinger, A. M. Michalak, and C. E. Miller (2018), Accelerating rates of Arctic carbon cycling revealed by long-term atmospheric CO<sub>2</sub> measurements, *Science Advances*, *4*(7), doi:10.1126/sciadv.aao1167.

Miles, N. L., D. K. Martins, S. J. Richardson, C. W. Rella, C. Arata, T. Lauvaux, K. J. Davis, Z. R. Barkley, K. McKain, and C. Sweeney (2018), Calibration and field testing of cavity ring-down laser spectrometers measuring CH4, CO2, and δ13CH4 deployed on towers in the Marcellus Shale region, *Atmos. Meas. Tech.*, *11*(3), 1273-1295, doi:10.5194/amt-11-1273-2018.

Müller, J. F., T. Stavrakou, M. Bauwens, M. George, D. Hurtmans, P. F. Coheur, C. Clerbaux, and C. Sweeney (2018), Top‐Down CO Emissions Based On IASI Observations and Hemispheric Constraints on OH Levels, *Geophys. Res. Lett.*, *45*(3), 1621-1629, doi:doi:10.1002/2017GL076697.

Nevison, C., A. Andrews, K. Thoning, E. Dlugokencky, C. Sweeney, M. Scot, E. Saikawa, J. Benmergui, M. Fischer, M. Mountain, and T. Nehrkorn (2018), Nitrous Oxide Emissions Estimated With the CarbonTracker‐Lagrange North American Regional Inversion Framework, *Glob. Biogeochem. Cycle*, *32*(3), 463-485, doi:doi:10.1002/2017GB005759.

Sargent, M., Y. Barrera, T. Nehrkorn, L. R. Hutyra, C. K. Gately, T. Jones, K. McKain, C. Sweeney, J. Hegarty, B. Hardiman, J. A. Wang, and S. C. Wofsy (2018), Anthropogenic and biogenic CO<sub>2</sub> fluxes in the Boston urban region, *Proceedings of the National Academy of Sciences*, *115*(29), 7491-7496, doi:10.1073/pnas.1803715115.

Stephens, B. B., Long, M. C.,Keeling, R. F., Kort, E. A., Sweeney C. et al. (2017) The O2/N2 Ratio and CO2 Airborne Southern Ocean (ORCAS) Study, Bull. Amer. Meteorol. Soc., 99(2), 381-402. doi: 10.1175/bams-d-16-0206.1

Turnbull, J. C., A. Karion, K. J. Davis, T. Lauvaux, N. L. Miles, S. J. Richardson, C. Sweeney, K. McKain, S. J. Lehman, K. R. Gurney, R. Patarasuk, J. Liang, P. B. Shepson, A. Heimburger, R. Harvey, and J. Whetstone (2019), Synthesis of Urban CO2 Emission Estimates from Multiple Methods from the Indianapolis Flux Project (INFLUX), *Environmental Science & Technology*, *53*(1), 287-295, doi:10.1021/acs.est.8b05552.

**2017**

Barkley, Z. R., T. Lauvaux, K. J. Davis, A. Deng, N. L. Miles, S. J. Richardson, Y. Cao, C. Sweeney, A. Karion, M. Smith, E. A. Kort, S. Schwietzke, T. Murphy, G. Cervone, D. Martins, and J. D. Maasakkers (2017), Quantifying methane emissions from natural gas production in north-eastern Pennsylvania, *Atmos. Chem. Phys.*, *17*(22), 13941-13966.doi: 10.5194/acp-17-13941-2017

Bruhwiler, L., S. Basu, P. Bergamaschi, P. Bousquet, E. Dlugokencky, S. Houweling, M. Ishizawa, H. S. Kim, R. Locatelli, and S. Maksyutov (2017), US CH4 emissions from oil and gas production: Have recent large increases been detected?, Journal of Geophysical Research: Atmospheres, 122(7), 4070-4083

Commane, R., J. Lindaas, J. Benmergui, K. A. Luus, R. Y.-W. Chang, B. C. Daube, E. S. Euskirchen, J. M. Henderson, A. Karion, and J. B. Miller (2017), Carbon dioxide sources from Alaska driven by increasing early winter respiration from Arctic tundra, Proceedings of the National Academy of Sciences, 201618567

Conley, S., I. Faloona, S. Mehrotra, M. Suard, D. H. Lenschow, C. Sweeney, S. Herndon, S. Schwietzke, G. Pétron, J. Pifer, E. A. Kort, and R. Schnell (2017), Application of Gauss's theorem to quantify localized surface emissions from airborne measurements of wind and trace gases, *Atmos. Meas. Tech.*, *10*(9), 3345-3358.doi: 10.5194/amt-10-3345-2017

Cox, C. J., R. S. Stone, D. C. Douglas, D. M. Stanitski, G. J. Divoky, G. S. Dutton, C. Sweeney, J. C. George, and D. U. Longenecker Drivers and environmental responses to the changing annual snow cycle of northern Alaska, Bull. Amer. Meteorol. Soc., 0(0), null.doi: 10.1175/bams-d-16-0201.1

Davis, K. J., A. Deng, T. Lauvaux, N. L. Miles, S. J. Richardson, D. P. Sarmiento, K. R. Gurney, R. M. Hardesty, T. A. Bonin, W. A. Brewer, B. K. Lamb, P. B. Shepson, R. M. Harvey, M.O. Cambaliza, C. Sweeney, J. C. Turnbull, J. Whetstone, A. Karion (2017). The Indianapolis Flux Experiment (INFLUX): A test-bed for developing urban greenhouse gas emission measurements. Elem Sci Anth. 2017;5:21. DOI: 10.1525/elementa.188

Deeter, M. N., Edwards, D. P., Francis, G. L., Gille, J. C., Martínez-Alonso, S., Worden, H. M., & Sweeney, C. (2017). A climate-scale satellite record for carbon monoxide: The MOPITT version 7 product. Atmospheric Measurement Techniques, 10(7), 2533-2555. doi:http://dx.doi.org/10.5194/amt-10-2533-2017

Eveleth, R., N. Cassar, S. C. Doney, D. R. Munro, and C. Sweeney (2017), Biological and physical controls on O2/Ar, Ar and pCO2 variability at the Western Antarctic Peninsula and in the Drake Passage, Deep Sea Research Part II: Topical Studies in Oceanography, 139, 77-88.doi: 10.1016/j.dsr2.2016.05.002

Gvakharia, A., E. A. Kort, A. Brandt, J. Peischl, T. B. Ryerson, J. P. Schwarz, M. L. Smith, and C. Sweeney (2017), Methane, Black Carbon, and Ethane Emissions from Natural Gas Flares in the Bakken Shale, North Dakota, Environ. Sci. Technol., 51(9), 5317-5325.doi: 10.1021/acs.est.6b05183

Heimburger , A. M. F., R. M. Harvey, P. B. Shepson, B. H. Stirm, C. Gore, J. Turnbull, M. O. L. Cambaliza, O. E. Salmon, A-E. M. Kerlo, T. N. Lavoie, K. J. Davis, T. Lauvaux, A. Karion, C. Sweeney, W. A. Brewer, R. M. Hardesty, K. R. Gurney (2017). Assessing the optimized precision of the aircraft mass balance method for measurement of urban greenhouse gas emission rates through averaging. Elem Sci Anth. 2017;5:26. DOI: 10.1525/elementa.134

Hilton, T. W., M. E. Whelan, A. Zumkehr, S. Kulkarni, J. A. Berry, I. T. Baker, S. A. Montzka, C. Sweeney, B. R. Miller, and J. Elliott Campbell (2017), Peak growing season gross uptake of carbon in North America is largest in the Midwest USA, Nat. Clim. Chang., 7, 450.doi: 10.1038/nclimate3272

Hu, L., S. A. Montzka, S. J. Lehman, D. S. Godwin, B. R. Miller, A. E. Andrews, K. Thoning, J. B. Miller, C. Sweeney, C. Siso, J. W. Elkins, B. D. Hall, D. J. Mondeel, D. Nance, T. Nehrkorn, M. Mountain, M. L. Fischer, S. C. Biraud, H. Chen, and P. P. Tans (2017), Considerable contribution of the Montreal Protocol to declining greenhouse gas emissions from the United States, Geophys. Res. Lett., 44(15), 8075-8083.doi: 10.1002/2017GL074388

Kulawik, S. S., C. O'Dell, V. H. Payne, L. Kuai, H. M. Worden, S. C. Biraud, C. Sweeney, B. Stephens, L. T. Iraci, E. L. Yates, and T. Tanaka (2017), Lower-tropospheric CO2 from near-infrared ACOS-GOSAT observations, Atmos. Chem. Phys., 17(8), 5407-5438.doi: 10.5194/acp-17-5407-2017

Lan, X., P. Tans, C. Sweeney, A. Andrews, A. Jacobson, M. Crotwell, E. Dlugokencky, J. Kofler, P. Lang, K. Thoning, and S. Wolter (2017), Gradients of Column CO2 across North America from the NOAA Global Greenhouse Gas Reference Network, Atmos. Chem. Phys. Discuss., 2017, 1-26.doi: 10.5194/acp-2017-293

Miles ,M. L., S. J. Richardson, T. Lauvaux, K. J. Davis, N. V. Balashov, A. Deng, J. C. Turnbull, C. Sweeney, K. R. Gurney, R. Patarasuk, I. Razlivanov, M. O. L. Cambaliza, P. B. Shepson (2017). Quantification of urban atmospheric boundary layer greenhouse gas dry mole fraction enhancements in the dormant season: Results from the Indianapolis Flux Experiment (INFLUX). Elem Sci Anth. 2017;5:27. DOI: 10.1525/elementa.127

Membrive, O., C. Crevoisier, C. Sweeney, F. Danis, A. Hertzog, A. Engel, H. Bönisch, and L. Picon (2017), AirCore-HR: a high-resolution column sampling to enhance the vertical description of CH4 and CO2, Atmos. Meas. Tech., 10(6), 2163-2181.doi: 10.5194/amt-10-2163-2017

Quay, P., R. Sonnerup, D. Munro, and C. Sweeney (2017), Anthropogenic CO2 accumulation and uptake rates in the Pacific Ocean based on changes in the 13C/12C of dissolved inorganic carbon, Global Biogeochem. Cycles, 31, 59–80, doi:10.1002/2016GB005460.

Richardson SJ, N. L. Miles, K. J. Davis, T. Lauvaux, D. K. Martins, J. C. Turnbull JC, Jocelyn C. Turnbull, K. McKain, C. Sweeney, M. O. L. Cambaliza (2017), Tower measurement network of in-situ CO2, CH4, and CO in support of the Indianapolis FLUX (INFLUX) Experiment. Elem Sci Anth. 2017;5:59. DOI: 10.1525/elementa.140

Smith, M. L., A. Gvakharia, E. A. Kort, C. Sweeney, S. A. Conley, I. Faloona, T. Newberger, R. Schnell, S. Schwietzke, and S. Wolter (2017), Airborne Quantification of Methane Emissions over the Four Corners Region, Environ. Sci. Technol., 51(10), 5832-5837.doi: 10.1021/acs.est.6b06107

Thorpe, A. K., C. Frankenberg, D. R. Thompson, R. M. Duren, A. D. Aubrey, B. D. Bue, R. O. Green, K. Gerilowski, T. Krings, J. Borchardt, E. A. Kort, C. Sweeney, S. Conley, D. A. Roberts, and P. E. Dennison (2017), Airborne DOAS retrievals of methane, carbon dioxide, and water vapor concentrations at high spatial resolution: application to AVIRIS-NG, *Atmos. Meas. Tech.*, *10*(10), 3833-3850.doi: 10.5194/amt-10-3833-2017

Vimont, I. J., J. C. Turnbull, V.V. Petrenko, P.F. Place, A. Karion, N. L. Miles, S. J. Richardson, K. Gurney, R. Patarasuk, C. Sweeney, B. Vaughn, J. W. C. White, Carbon monoxide isotopic measurements in Indianapolis constrain urban source isotopic signatures and support mobile fossil fuel emissions as the dominant wintertime CO source. Elem Sci Anth. 2017;5:63. DOI: 10.1525/elementa.136

**2016**

Bakker, D. C. E; Pfeil, B., L.S, Camill, N. Metzl, K. M . O'Brien, C. Sweeney et al.(2016), Multi-decade record of high-quality fCO2 data in version 3 of the Surface Ocean CO2 Atlas (SOCAT), **Earth System Science Data; Katlenburg-Lindau**8.2 (2016): 383-413.

Coakley, K. J., J. B. Miller, S. A. Montzka, C. Sweeney, and B. R. Miller (2016), Surrogate gas prediction model as a proxy for Δ14C-based measurements of fossil fuel CO2, Journal of Geophysical Research: Atmospheres, 121(12), 7489-7505.doi: 10.1002/2015JD024715

Frankenberg, C., A. K. Thorpe, D. R. Thompson, G. Hulley, E. A. Kort, N. Vance, J. Borchardt, T. Krings, K. Gerilowski, C. Sweeney, S. Conley, B. D. Bue, A. D. Aubrey, S. Hook, and R. O. Green (2016), Airborne methane remote measurements reveal heavy-tail flux distribution in Four Corners region, Proceedings of the National Academy of Sciences, 113(35), 9734-9739.doi: 10.1073/pnas.1605617113

Hardesty, R. M., W. A. Brewer, S. P. Sandberg, A. M. Weickmann, P. B. Shepson, M. Cambaliza, A. Heimburger, K. J. Davis, T. Lauvaux, N. L. Miles, D. P. Sarmiento, A. J. Deng, B. Gaudet, A. Karion, C. Sweeney, and J. Whetstone (2016), Lidar Characterization of Boundary Layer Transport and Mixing for Estimating Urban-Scale Greenhouse Gas Emissions, *EPJ Web of Conferences*, *119*, 09001

Hu, L., S. A. Montzka, B. R. Miller, A. E. Andrews, J. B. Miller, S. J. Lehman, C. Sweeney, S. M. Miller, K. Thoning, C. Siso, E. L. Atlas, D. R. Blake, J. de Gouw, J. B. Gilman, G. Dutton, J. W. Elkins, B. Hall, H. Chen, M. L. Fischer, M. E. Mountain, T. Nehrkorn, S. C. Biraud, F. L. Moore, and P. Tans (2016), 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, 113(11), 2880-2885.doi: 10.1073/pnas.1522284113

Karion, A., C. Sweeney, J. B. Miller, A. E. Andrews, R. Commane, S. Dinardo, J. M. Henderson, J. Lindaas, J. C. Lin, K. A. Luus, T. Newberger, P. Tans, S. C. Wofsy, S. Wolter, and C. E. Miller (2016), Investigating Alaskan methane and carbon dioxide fluxes using measurements from the CARVE tower, Atmos. Chem. Phys., 16(8), 5383-5398.doi: 10.5194/acp-16-5383-2016

Kort, E. A., M. L. Smith, L. T. Murray, A. Gvakharia, A. R. Brandt, J. Peischl, T. B. Ryerson, C. Sweeney, and K. Travis (2016), Fugitive emissions from the Bakken shale illustrate role of shale production in global ethane shift, *Geophysical Research Letters*, *43*(9), 4617-4623.doi: 10.1002/2016GL068703

Inoue, M., Morino, I., Uchino, O., Nakatsuru, T., Yoshida, Y., Yokota, T., C. Sweeney , et al. (2016). Bias corrections of GOSAT SWIR XCO2 and XCH4 with TCCON data and their evaluation using aircraft measurement data. *Atmospheric Measurement Techniques,* *9*(8), 3491-3512. doi:10.5194/amt-9-3491-2016.

Lauvaux, T., N. L. Miles, A. Deng, S. J. Richardson, M. O. Cambaliza, K. J. Davis, B. Gaudet, K. R. Gurney, J. Huang, D. O'Keefe, Y. Song, A. Karion, T. Oda, R. Patarasuk, I. Razlivanov, D. Sarmiento, P. Shepson, C. Sweeney, J. Turnbull, and K. Wu (2016), High-resolution atmospheric inversion of urban CO2 emissions during the dormant season of the Indianapolis Flux Experiment (INFLUX), *Journal of Geophysical Research: Atmospheres*, *121*(10), 5213-5236.doi: 10.1002/2015JD024473

Miller, S. M., C. E. Miller, R. Commane, R. Y. W. Chang, S. J. Dinardo, J. M. Henderson, A. Karion, J. Lindaas, J. R. Melton, J. B. Miller, C. Sweeney, S. C. Wofsy, and A. M. Michalak (2016), A multiyear estimate of methane fluxes in Alaska from CARVE atmospheric observations, Global Biogeochemical Cycles, 30(10), 1441-1453.doi: 10.1002/2016GB005419

Miller, S. M., R. Commane, J. R. Melton, A. E. Andrews, J. Benmergui, E. J. Dlugokencky, G. Janssens-Maenhout, A. M. Michalak, C. Sweeney, and D. E. J. Worthy (2016), Evaluation of wetland methane emissions across North America using atmospheric data and inverse modeling, Biogeosciences, 13(4), 1329-1339.doi: 10.5194/bg-13-1329-2016

Oltmans, S.J., A. Karion, R.C. Schnell, G. Pétron, C. Sweeney, S. Wolter, D. Neff, S.A. Montzka, B.R. Miller, D. Helmig, B.J. Johnson, J. Hueber, S. Conely (2016), O3, CH4, CO2, CO, NO2, and NMHC aircraft measurements in the Uinta Basin oil and gas region under low and high ozone conditions in winter 2012 and 2013, Elementa, doi:12952/journal.elementa.000132

Peischl, J., A. Karion, C. Sweeney, E. A. Kort, M. L. Smith, A. R. Brandt, T. Yeskoo, K. C. Aikin, S. A. Conley, A. Gvakharia, M. Trainer, S. Wolter, and T. B. Ryerson (2016), Quantifying atmospheric methane emissions from oil and natural gas production in the Bakken shale region of North Dakota, *Journal of Geophysical Research: Atmospheres*, *121*(10), 6101-6111.doi: 10.1002/2015JD024631

Parazoo, N. C., R. Commane, S. C. Wofsy, C. D. Koven, C. Sweeney, D. M. Lawrence, J. Lindaas, R. Y.-W. Chang, and C. E. Miller (2016), Detecting regional patterns of changing CO2 flux in Alaska, Proceedings of the National Academy of Sciences, 113(28), 7733-7738.doi: 10.1073/pnas.1601085113

Song, H., J. Marshall, D. R. Munro, S. Dutkiewicz, C. Sweeney, D. J. McGillicuddy, and U. Hausmann (2016), Mesoscale modulation of air-sea CO2 flux in Drake Passage, Journal of Geophysical Research: Oceans, 121(9), 6635-6649.doi: 10.1002/2016JC011714

Sweeney, C., E. Dlugokencky, C. E. Miller, S. Wofsy, A. Karion, S. Dinardo, R. Y. W. Chang, J. B. Miller, L. Bruhwiler, A. M. Crotwell, T. Newberger, K. McKain, R. S. Stone, S. E. Wolter, P. E. Lang, and P. Tans (2016), No significant increase in long-term CH4 emissions on North Slope of Alaska despite significant increase in air temperature, Geophysical Research Letters, 43(12), 6604-6611.doi: 10.1002/2016GL069292

Tan, Z., Q. Zhuang, D. K. Henze, C. Frankenberg, E. Dlugokencky, C. Sweeney, A. J. Turner, M. Sasakawa, and T. Machida (2016), Inverse modeling of pan-Arctic methane emissions at high spatial resolution: what can we learn from assimilating satellite retrievals and using different process-based wetland and lake biogeochemical models?, Atmos. Chem. Phys., 16(19), 12649-12666.doi: 10.5194/acp-16-12649-2016

Wiggins, E. B., S. Veraverbeke, J. M. Henderson, A. Karion, J. B. Miller, J. Lindaas, R. Commane, C. Sweeney, K. A. Luus, M. G. Tosca, S. J. Dinardo, S. Wofsy, C. E. Miller, and J. T. Randerson (2016), The influence of daily meteorology on boreal fire emissions and regional trace gas variability, Journal of Geophysical Research: Biogeosciences, n/a-n/a.doi: 10.1002/2016JG003434

Zona, D., B. Gioli, R. Commane, J. Lindaas, S. C. Wofsy, C. E. Miller, S. J. Dinardo, S. Dengel, C. Sweeney, A. Karion, R. Y. W. Chang, J. M. Henderson, P. C. Murphy, J. P. Goodrich, V. Moreaux, A. Liljedahl, J. D. Watts, J. S. Kimball, D. A. Lipson, and W. C. Oechel (2016), Cold season emissions dominate the Arctic tundra methane budget, Proceedings of the National Academy of Sciences of the United States of America, 113(1), 40-45.doi: 10.1073/pnas.1516017113

**2015**

Ahmadov, R., S. McKeen, M. Trainer, R. Banta, A. Brewer, S. Brown, P. M. Edwards, J. A. de Gouw, G. J. Frost, J. Gilman, D. Helmig, B. Johnson, A. Karion, A. Koss, A. Langford, B. Lerner, J. Olson, S. Oltmans, J. Peischl, G. Petron, Y. Pichugina, J. M. Roberts, T. Ryerson, R. Schnell, C. Senff, C. Sweeney, C. Thompson, P. R. Veres, C. Warneke, R. Wild, E. J. Williams, B. Yuan, and R. Zamora (2015), Understanding high wintertime ozone pollution events in an oil- and natural gas-producing region of the western US, Atmospheric Chemistry and Physics, 15(1), 411-429.doi: 10.5194/acp-15-411-2015

Alexe, M., P. Bergamaschi, A. Segers, R. Detmers, A. Butz, O. Hasekamp, S. Guerlet, R. Parker, H. Boesch, C. Frankenberg, R. A. Scheepmaker, E. Dlugokencky, C. Sweeney, S. C. Wofsy, and E. A. Kort (2015), Inverse modelling of CH4 emissions for 2010-2011 using different satellite retrieval products from GOSAT and SCIAMACHY, Atmospheric Chemistry and Physics, 15(1), 113-133.doi: 10.5194/acp-15-113-2015

Cambaliza, M. O. L., P. B. Shepson, J. Bogner, D. R. Caulton, B. Stirm, C. Sweeney, S. A. Montzka, K. R. Gurney, K. Spokas, O. E. Salmon, T. N. Lavoie, A. Hendricks, K. Mays, J. Turnbull, B. R. Miller, T. Lauvaux, K. Davis, A. Karion, B. Moser, C. Miller, C. Obermeyer, J. Whetstone, K. Prasad, N. Miles, and S. Richardson (2015), Quantification and source apportionment of the methane emission flux from the city of Indianapolis, Elementa-Science of the Anthropocene, 3, 000037-Article No.: 000037.doi: 10.12952/journal.elementa.000037

Henderson, J. M., J. Eluszkiewicz, M. E. Mountain, T. Nehrkorn, R. Y. W. Chang, A. Karion, J. B. Miller, C. Sweeney, N. Steiner, S. C. Wofsy, and C. E. Miller (2015), Atmospheric transport simulations in support of the Carbon in Arctic Reservoirs Vulnerability Experiment (CARVE), Atmospheric Chemistry and Physics, 15(8), 4093-4116.doi: 10.5194/acp-15-4093-2015

Hu, L., S. A. Montzka, J. B. Miller, A. E. Andrews, S. J. Lehman, B. R. Miller, K. Thoning, C. Sweeney, H. Chen, D. S. Godwin, K. Masarie, L. Bruhwiler, M. L. Fischer, S. C. Biraud, M. S. Torn, M. Mountain, T. Nehrkorn, J. Eluszkiewicz, S. Miller, R. R. Draxler, A. F. Stein, B. D. Hall, J. W. Elkins, and P. P. Tans (2015), US emissions of HFC-134a derived for 2008-2012 from an extensive flask-air sampling network, Journal of Geophysical Research-Atmospheres, 120(2), 801-825.doi: 10.1002/2014jd022617

Karion, A., C. Sweeney, E. A. Kort, P. B. Shepson, A. Brewer, M. Cambaliza, S. A. Conley, K. Davis, A. Deng, M. Hardesty, S. C. Herndon, T. Lauvaux, T. Lavoie, D. Lyon, T. Newberger, G. Petron, C. Rella, M. Smith, S. Wolter, T. I. Yacovitch, and P. Tans (2015), Aircraft-Based Estimate of Total Methane Emissions from the Barnett Shale Region, Environmental Science & Technology, 49(13), 8124-8131.doi: 10.1021/acs.est.5b00217

Landschutzer, P., N. Gruber, A. Haumann, C. Rodenbeck, D. C. E. Bakker, S. van Heuven, M. Hoppema, N. Metzl, C. Sweeney, T. Takahashi, B. Tilbrook, and R. Wanninkhof (2015), The reinvigoration of the Southern Ocean carbon sink, Science, 349(6253), 1221-1224.doi: 10.1126/science.aab2620

Lavoie, T. N., P. B. Shepson, M. O. L. Cambaliza, B. H. Stirm, A. Karion, C. Sweeney, T. I. Yacovitch, S. C. Herndon, X. Lan, and D. Lyon (2015), Aircraft-Based Measurements of Point Source Methane Emissions in the Barnett Shale Basin, Environmental Science & Technology, 49(13), 7904-7913.doi: 10.1021/acs.est.5b00410

Munro, D. R., N. S. Lovenduski, T. Takahashi, B. B. Stephens, T. Newberger, and C. Sweeney (2015), Recent evidence for a strengthening CO2 sink in the Southern Ocean from carbonate system measurements in the Drake Passage (2002-2015), Geophysical Research Letters, 42(18), 7623-7630.doi: 10.1002/2015gl065194

Munro, D. R., N. S. Lovenduski, B. B. Stephens, T. Newberger, K. R. Arrigo, T. Takahashi, P. D. Quay, J. Sprintall, N. M. Freeman, and C. Sweeney (2015), Estimates of net community production in the Southern Ocean determined from time series observations (2002-2011) of nutrients, dissolved inorganic carbon, and surface ocean pCO(2) in Drake Passage, Deep-Sea Research Part Ii-Topical Studies in Oceanography, 114, 49-63.doi: 10.1016/j.dsr2.2014.12.014

Schwarz, JP, JS Holloway, JM Katich, S McKeen, EA Kort, ML Smith, TB Ryerson, C Sweeney and J Peischl (2015), Black Carbon Emissions from the Bakken Oil and Gas Development Region. Environ. Sci. Technol. Lett., 2 (10) 281-285, issn: 2328-8930, ids: CT6NW, [doi: 10.1021/acs.estlett.5b00225](http://dx.doi.org/10.1021/acs.estlett.5b00225)

Smith, M. L., E. A. Kort, A. Karion, C. Sweeney, S. C. Herndon, and T. I. Yacovitch (2015), Airborne Ethane Observations in the Barnett Shale: Quantification of Ethane Flux and Attribution of Methane Emissions, Environmental Science & Technology, 49(13), 8158-8166.doi: 10.1021/acs.est.5b00219

Sweeney, C., A. Karion, S. Wolter, T. Newberger, D. Guenther, J. A. Higgs, A. E. Andrews, P. M. Lang, D. Neff, E. Dlugokencky, J. B. Miller, S. A. Montzka, B. R. Miller, K. A. Masarie, S. C. Biraud, P. C. Novelli, M. Crotwell, A. M. Crotwell, K. Thoning, and P. P. Tans (2015), Seasonal climatology of CO2 across North America from aircraft measurements in the NOAA/ESRL Global Greenhouse Gas Reference Network, Journal of Geophysical Research-Atmospheres, 120(10), 5155-5190.doi: 10.1002/2014jd022591

Turnbull, J. C., C. Sweeney, A. Karion, T. Newberger, S. J. Lehman, P. P. Tans, K. J. Davis, T. Lauvaux, N. L. Miles, S. J. Richardson, M. O. Cambaliza, P. B. Shepson, K. Gurney, R. Patarasuk, and I. Razlivanov (2015), Toward quantification and source sector identification of fossil fuel CO2 emissions from an urban area: Results from the INFLUX experiment, Journal of Geophysical Research-Atmospheres, 120(1), 292-312.doi: 10.1002/2014jd022555

Turner, A. J., D. J. Jacob, K. J. Wecht, J. D. Maasakkers, E. Lundgren, A. E. Andrews, S. C. Biraud, H. Boesch, K. W. Bowman, N. M. Deutscher, M. K. Dubey, D. W. T. Griffith, F. Hase, A. Kuze, J. Notholt, H. Ohyama, R. Parker, V. H. Payne, R. Sussmann, C. Sweeney, V. A. Velazco, T. Warneke, P. O. Wennberg, and D. Wunch (2015), Estimating global and North American methane emissions with high spatial resolution using GOSAT satellite data, Atmospheric Chemistry and Physics, 15(12), 7049-7069.doi: 10.5194/acp-15-7049-2015

Zavala-Araiza, D, DR Lyon, RA Alvarez, KJ Davis, R Harriss, SC Herndon, A Karion, EA Kort, BK Lamb, X Lan, AJ Marchese, SW Pacala, AL Robinson, PB Shepson, C Sweeney, R Talbot, A Townsend-Small, TI Yacovitch, DJ Zimmerle and SP Hamburg (2015), Reconciling divergent estimates of oil and gas methane emissions. Proc. Natl. Acad. Sci. U. S. A., 112 (51) 15597-15602, issn: 0027-8424, ids: CZ2DT, [doi: 10.1073/pnas.1522126112](http://dx.doi.org/10.1073/pnas.1522126112)

**2014**

|  |  |  |
| --- | --- | --- |
| Bruhwiler, L, E Dlugokencky, K Masarie, M Ishizawa, A Andrews, J Miller, C Sweeney, P Tans and D Worthy (2014), CarbonTracker-CH4: an assimilation system for estimating emissions of atmospheric methane. Atmos. Chem. Phys., 14 (16) 8269-8293, issn: 1680-7316, ids: AP3QK, [doi: 10.5194/acp-14-8269-2014](http://dx.doi.org/10.5194/acp-14-8269-2014)Cambaliza, M. O. L., Shepson, P. B., Bogner, J., Caulton, D. R., Stirm, B. H., Sweeney, C., Montzka, S. A., Gurney, K. R., Spokas, K., Salmon, O., Lavoie, T., Hendricks, A., Mays, K. L., Turnbull, J. C., Miller, B. R., Lauvaux, T., Davis, K. J., Karion, A., Moser, B., Miller, C., Obermeyer, C., Whetstone, J., Prasad, K., Crosson, E. R., Miles, N. L., and Richardson, S. J. (2014), Quantification and source apportionment of the methane emission flux from the city of Indianapolis. Elementa, 3 , [doi: 10.12952/journal.elementa.000037](http://dx.doi.org/10.12952/journal.elementa.000037)Cambaliza, MOL, PB Shepson, DR Caulton, B Stirm, D Samarov, KR Gurney, J Turnbull, KJ Davis, A Possolo, A Karion, C Sweeney, B Moser, A Hendricks, T Lauvaux, K Mays, J Whetstone, J Huang, I Razlivanov, NL Miles and SJ Richardson (2014), Assessment of uncertainties of an aircraft-based mass balance approach for quantifying urban greenhouse gas emissions. Atmos. Chem. Phys., 14 (17) 9029-9050, issn: 1680-7316, ids: AP3QO, [doi: 10.5194/acp-14-9029-2014](http://dx.doi.org/10.5194/acp-14-9029-2014)Caulton, DR, PB Shepson, RL Santoro, JP Sparks, RW Howarth, AR Ingraffea, MOL Cambaliza, C Sweeney, A Karion, KJ Davis, BH Stirm, SA Montzka and BR Miller (2014), Toward a better understanding and quantification of methane emissions from shale gas development. Proc. Natl. Acad. Sci. U. S. A., 111 (17) 6237-6242, issn: 0027-8424, ids: AG1TL, [doi: 10.1073/pnas.1316546111](http://dx.doi.org/10.1073/pnas.1316546111), [PubMed\_id: 24733927](http://www.ncbi.nlm.nih.gov/pubmed/24733927)Chang, RYW, CE Miller, SJ Dinardo, A Karion, C Sweeney, BC Daube, JM Henderson, ME Mountain, J Eluszkiewicz, JB Miller, LMP Bruhwiler and SC Wofsy (2014), Methane emissions from Alaska in 2012 from CARVE airborne observations. Proc. Natl. Acad. Sci. U. S. A., 111 (47) 16694-16699, issn: 0027-8424, ids: AU5QX, [doi: 10.1073/pnas.1412953111](http://dx.doi.org/10.1073/pnas.1412953111), [PubMed\_id: 25385648](http://www.ncbi.nlm.nih.gov/pubmed/25385648) |  |  |

Conley, SA, IC Faloona, DH Lenschow, A Karion and C Sweeney (2014), A Low-Cost System for Measuring Horizontal Winds from Single-Engine Aircraft. J. Atmos. Ocean. Technol., 31 (6) 1312-1320, issn: 0739-0572, ids: AI8VJ, [doi: 10.1175/JTECH-D-13-00143.1](http://dx.doi.org/10.1175/JTECH-D-13-00143.1)

Deeter, MN, S Martinez-Alonso, DP Edwards, LK Emmons, JC Gille, HM Worden, C Sweeney, JV Pittman, BC Daube and SC Wofsy (2014), The MOPITT Version 6 product: algorithm enhancements and validation. Atmos. Meas. Tech., 7 (11) 3623-3632, issn: 1867-1381, ids: AU7LB, [doi: 10.5194/amt-7-3623-2014](http://dx.doi.org/10.5194/amt-7-3623-2014)

Edwards, PM, SS Brown, JM Roberts, R Ahmadov, RM Banta, JA deGouw, WP Dube, RA Field, JH Flynn, JB Gilman, M Graus, D Helmig, A Koss, AO Langford, BL Lefer, BM Lerner, R Li, SM Li, SA McKeen, SM Murphy, DD Parrish, CJ Senff, J Soltis, J Stutz, C Sweeney, CR Thompson, MK Trainer, C Tsai, PR Veres, RA Washenfelder, C Warneke, RJ Wild, CJ Young, B Yuan and R Zamora (2014), High winter ozone pollution from carbonyl photolysis in an oil and gas basin. Nature, 514 (7522) 351-+, Art. No. 10.1038/nature13767, issn: 0028-0836, ids: AQ7JH, [doi: 10.1038/nature13767](http://dx.doi.org/10.1038/nature13767), [PubMed\_id: 25274311](http://www.ncbi.nlm.nih.gov/pubmed/25274311)

Inoue, M, I Morino, O Uchino, Y Miyamoto, T Saeki, Y Yoshida, T Yokota, C Sweeney, PP Tans, SC Biraud, T Machida, JV Pittman, EA Kort, T Tanaka, S Kawakami, Y Sawa, K Tsuboi and H Matsueda (2014), Validation of XCH4 derived from SWIR spectra of GOSAT TANSO-FTS with aircraft measurement data. Atmos. Meas. Tech., 7 (9) 2987-3005, issn: 1867-1381, ids: AQ8WR, [doi: 10.5194/amt-7-2987-2014](http://dx.doi.org/10.5194/amt-7-2987-2014)

Jiang, CL, ST Gille, J Sprintall and C Sweeney (2014), Drake Passage Oceanic pCO(2): Evaluating CMIP5 Coupled Carbon-Climate Models Using in situ Observations. J. Clim., 27 (1) 76-100, issn: 0894-8755, ids: 283VV, [doi: 10.1175/JCLI-D-12-00571.1](http://dx.doi.org/10.1175/JCLI-D-12-00571.1)

Moore, FL, EA Ray, KH Rosenlof, JW Elkins, P Tans, A Karion and C Sweeney (2014), A Cost-Effective Trace Gas Measurement Program for Long-Term Monitoring of the Stratospheric Circulation. Bull. Amer. Meteor. Soc., 95 (1) 147-155, issn: 0003-0007, ids: AB8NL, [doi: 10.1175/BAMS-D-12-00153.1](http://dx.doi.org/10.1175/BAMS-D-12-00153.1)

Li, R, C Warneke, M Graus, R Field, F Geiger, PR Veres, J Soltis, SM Li, SM Murphy, C Sweeney, G Petron, JM Roberts and J de Gouw (2014), Measurements of hydrogen sulfide (H2S) using PTR-MS: calibration, humidity dependence, inter-comparison and results from field studies in an oil and gas production region. Atmos. Meas. Tech., 7 (10) 3597-3610, issn: 1867-1381, ids: AT2AE, [doi: 10.5194/amt-7-3597-2014](http://dx.doi.org/10.5194/amt-7-3597-2014)

Petron, G, A Karion, C Sweeney, BR Miller, SA Montzka, GJ Frost, M Trainer, P Tans, A Andrews, J Kofler, D Helmig, D Guenther, E Dlugokencky, P Lang, T Newberger, S Wolter, B Hall, P Novelli, A Brewer, S Conley, M Hardesty, R Banta, A White, D Noone, D Wolfe and R Schnell (2014), A new look at methane and nonmethane hydrocarbon emissions from oil and natural gas operations in the Colorado Denver-Julesburg Basin. J. Geophys. Res. Atmos., 119 (11) 6836-6852, issn: 2169-897X, ids: AJ8RK, [doi: 10.1002/2013JD021272](http://dx.doi.org/10.1002/2013JD021272)

Ray, EA, FL Moore, KH Rosenlof, SM Davis, C Sweeney, P Tans, T Wang, JW Elkins, H Bonisch, A Engel, S Sugawara, T Nakazawa and S Aoki (2014), Improving stratospheric transport trend analysis based on SF6 and CO2 measurements. J. Geophys. Res. Atmos., 119 (24) 14110-14128, issn: 2169-897X, ids: AZ8IX, [doi: 10.1002/2014JD021802](http://dx.doi.org/10.1002/2014JD021802)

Rieker, GB, FR Giorgetta, WC Swann, J Kofler, AM Zolot, LC Sinclair, E Baumann, C Cromer, G Petron, C Sweeney, PP Tans, I Coddington and NR Newbury (2014), Frequency-comb-based remote sensing of greenhouse gases over kilometer air paths. Optica, 1 (5) 290-298, issn: 2334-2536, ids: CI6JE, [doi: 10.1364/OPTICA.1.000290](http://dx.doi.org/10.1364/OPTICA.1.000290)

Santoni, GW, BC Daube, EA Kort, R Jimenez, S Park, JV Pittman, E Gottlieb, B Xiang, MS Zahniser, DD Nelson, JB McManus, J Peischl, TB Ryerson, JS Holloway, AE Andrews, C Sweeney, B Hall, EJ Hintsa, FL Moore, JW Elkins, DF Hurst, BB Stephens, J Bent and SC Wofsy (2014), Evaluation of the airborne quantum cascade laser spectrometer (QCLS) measurements of the carbon and greenhouse gas suite - CO2, CH4, N2O, and CO - during the CalNex and HIPPO campaigns. Atmos. Meas. Tech., 7 (6) 1509-1526, issn: 1867-1381, ids: AM5YB, [doi: 10.5194/amt-7-1509-2014](http://dx.doi.org/10.5194/amt-7-1509-2014)

Takahashi, T, SC Sutherland, DW Chipman, JG Goddard, C Ho, T Newberger, C Sweeney and DR Munro (2014), Climatological distributions of pH, pCO(2), total CO2, alkalinity, and CaCO3 saturation in the global surface ocean, and temporal changes at selected locations. Mar. Chem., 164 95-125, issn: 0304-4203, ids: AO0CY, [doi: 10.1016/j.marchem.2014.06.004](http://dx.doi.org/10.1016/j.marchem.2014.06.004)

Thompson, RL, PK Patra, K Ishijima, E Saikawa, M Corazza, U Karstens, C Wilson, P Bergamaschi, E Dlugokencky, C Sweeney, RG Prinn, RF Weiss, S O'Doherty, PJ Fraser, LP Steele, PB Krummel, M Saunois, M Chipperfield and P Bousquet (2014), TransCom N2O model inter-comparison - Part 1: Assessing the influence of transport and surface fluxes on tropospheric N2O variability. Atmos. Chem. Phys., 14 (8) 4349-4368, issn: 1680-7316, ids: AH2AO, [doi: 10.5194/acp-14-4349-2014](http://dx.doi.org/10.5194/acp-14-4349-2014)

Yacovitch, TI, SC Herndon, JR Roscioli, C Floerchinger, RM McGovern, M Agnese, G Petron, J Kofler, C Sweeney, A Karion, SA Conley, EA Kort, L Nahle, M Fischer, L Hildebrandt, J Koeth, JB McManus, DD Nelson, MS Zahniser and CE Kolb (2014), Demonstration of an Ethane Spectrometer for Methane Source Identification. Environ. Sci. Tech., 2014 (48) 8028-8034, issn: 0013-936X, ids: AL6FH, isbn: 14, [doi: 10.1021/es501475q](http://dx.doi.org/10.1021/es501475q), [PubMed\_id: 24945706](http://www.ncbi.nlm.nih.gov/pubmed/24945706)

**2013**

Bakker, D. C. E., et al. (2013) An update to the Surface Ocean CO2 Atlas (SOCAT version 2). *Earth System Science Data Discussions*, 6, 465-512, doi:10.5194/essdd-6-465-2013.

Bergamaschi, P., S. Houweling, A. Segers, M. Krol, C. Frankenberg, R. A. Scheepmaker, E. Dlugokencky, S. C. Wofsy, E. A. Kort, C. Sweeney, T. Schuck, C. Brenninkmeijer, H. Chen, V. Beck, and C. Gerbig (2013), Atmospheric CH4 in the first decade of the 21st century: Inverse modeling analysis using SCIAMACHY satellite retrievals and NOAA surface measurements, *J. Geophys. Res.-Atmos.*, 118(13), 7350-7369. doi: 10.1002/jgrd.50480.

Chatterjee, A., R. J. Engelen, S. R. Kawa, C. Sweeney, and A. M. Michalak (2013), Background error covariance estimation for atmospheric CO2 data assimilation, *J. Geophys. Res.-Atmos.*, *118*(17), 10140-10154.doi: 10.1002/jgrd.50654

Graven, H. D., R. F. Keeling, S. C. Piper, P. K. Patra, B. B. Stephens, S. C. Wofsy, L. R. Welp, C. Sweeney, P. P. Tans, J. J. Kelley, B. C. Daube, E. A. Kort, G. W. Santoni, and J. D. Bent (2013), Enhanced Seasonal Exchange of CO2 by Northern Ecosystems Since 1960, *Science*, *341*(6150), 1085-1089. doi: 10.1126/science.1239207.

Karion, A., C. Sweeney, G. Pétron, G. Frost, R. Michael Hardesty, J. Kofler, B. R. Miller, T. Newberger, S. Wolter, R. Banta, A. Brewer, E. Dlugokencky, P. Lang, S. A. Montzka, R. Schnell, P. Tans, M. Trainer, R. Zamora, and S. Conley (2013), Methane emissions estimate from airborne measurements over a western United States natural gas field, *Geophys. Res. Lett.*, 40(16), 4393-4397. doi: 10.1002/grl.50811.

Miller, S. M., S. C. Wofsy, A. M. Michalak, E. A. Kort, A. E. Andrews, S. C. Biraud, E. J. Dlugokencky, J. Eluszkiewicz, M. L. Fischer, G. Janssens-Maenhout, B. R. Miller, J. B. Miller, S. A. Montzka, T. Nehrkorn, and C. Sweeney (2013), Anthropogenic emissions of methane in the United States, *Proceedings of the National Academy of Sciences*, *110*(50), 20018-20022.doi: 10.1073/pnas.1314392110

Miyamoto, Y., M. Inoue, I. Morino, O. Uchino, T. Yokota, T. Machida, Y. Sawa, H. Matsueda, C. Sweeney, P. P. Tans, A. E. Andrews, S. C. Biraud, and P. K. Patra (2013), Corrigendum to "Atmospheric column-averaged mole fractions of carbon dioxide at 53 aircraft measurement sites" published in Atmos. Chem. Phys. 13, 5265–5275, 2013, *Atmos. Chem. Phys.*, 13(18), 9213-9216. doi: 10.5194/acp-13-9213-2013

Miyamoto, Y., M. Inoue, I. Morino, O. Uchino, T. Yokota, T. Machida, Y. Sawa, H. Matsueda, C. Sweeney, P. P. Tans, A. E. Andrews, and P. K. Patra (2013), Atmospheric column-averaged mole fractions of carbon dioxide at 53 aircraft measurement sites, *Atmos. Chem. Phys.*, 13(10), 5265-5275. doi: 10.5194/acp-13-5265-2013.

Xiong, X., C. Barnet, E. Maddy, S. C. Wofsy, L. Chen, A. Karion, and C. Sweeney (2013), Detection of methane depletion associated with stratospheric intrusion by atmospheric infrared sounder (AIRS), *Geophys. Res. Lett.*, 40(10), 2455-2459. doi: 10.1002/grl.50476.

**2012**

Jeong, S., C. Zhao, A. E. Andrews, E. J. Dlugokencky, C. Sweeney, L. Bianco, J. M. Wilczak, and M. L. Fischer (2012), Seasonal variations in N2O emissions from central California, *Geophys. Res. Lett.*, 39(16), L16805. doi: 10.1029/2012GL052307.

Karion, A., C. Sweeney, S. Wolter, T. Newberger, H. Chen, A. Andrews, J. Kofler, D. Neff, and P. Tans. (2012) Long-term greenhouse gas measurements from aircraft. *Atmos. Meas. Tech. Discuss.*, 5, 7341-7382. doi:10.5194/amtd-5-7341-2012

Biraud, S.C., M. S. Torn, J. R. Smith, C. Sweeney, W. J. Riley, and P. P. Tans. (2012) A multi-year record of airborne CO2 observations in the US Southern Great Plains, *Atmos. Meas. Tech.*, 5, 7187-7222. doi:10.5194/amtd-5-7187-2012

Chen, H., A. Karion, C. W. Rella, J. Winderlich, C. Gerbig, A. Filges, T. Newberger, C. Sweeney, and P. P. Tans. (2012) Accurate measurements of carbon monoxide in humid air using the cavity ring-down spectroscopy (CRDS) technique. *Atmos. Meas. Tech. Discuss.*, 5, 6493-6517, doi:10.5194/amtd-5-6493-2012

Rella, C.H., H. Chen, A. E. Andrews, A. Filges, C. Gerbig, J. Hatakka, A. Karion, N. L. Miles, S. J. Richardson, M. Steinbacher, C. Sweeney, B. Wastine, and C. Zellweger (2012) High accuracy measurements of dry mole fractions of carbon dioxide and methane in humid air. *Atmos. Meas. Tech. Discuss.*, 5, 5823-5888. doi:10.5194/amtd-5-5823-2012

Wanninkhof, R., G. H. Park, T. Takahashi, C. Sweeney, R. Feely, Y. Nojiri, N. Gruber, S. C. Doney, G. A. McKinley, A. Lenton, L. Q. C., C. Heinze, J. Schwinger, H. Graven, and S. Khatiwala (2012), Global Ocean Carbon Uptake: Magnitude, Variability and Trends, *Biogeosciences Discuss.* , *9*, 10961-11101.doi: 10.5194/bgd-9-10961-2012

Cooper, O. R., R. S. Gao, D. Tarasick, T. Leblanc, and C. Sweeney (2012), Long-term ozone trends at rural ozone monitoring sites across the United States, 1990-2010, *J. Geophys. Res.-Atmos.*, *117*.doi: 10.1029/2012jd018261

Turnbull, J. C., D. Guenther, A. Karion, C. Sweeney, E. Anderson, A. E. Andrews, J. Kofler, N. L. Miles, T. Newberger, S. J. Richardson and P. P. Tans (2012). "An integrated flask sample collection system for greenhouse gas measurements." *Atmospheric Measurement Techniques* 5: 2321-2327. doi:10.5194/amtd-5-4077-2012

Takahashi, T., C. Sweeney, B. Hales, D. W. Chipman, T. Newberger, J. G. Goddard, and R. A. S. Iannuzzi, S.C. ( 2012), The changing carbon cycle in the Southern Ocean. *Oceanography*, *25*(3), 26–37.doi: 10.5670/oceanog.2012.71

Sprintall, J., T. K. Chereskin, and C. Sweeney (2012), High-Resolution underway upper ocean and surface atmospheric observations in Drake Passage: Synergistic measurements for climate science *Oceanography*, *25*(3), 70-81.doi: http://dx.doi.org/10.5670/oceanog.2012.77.

Gourdji, SM, KL Mueller, V Yadav, DN Huntzinger, AE Andrews, M Trudeau, G Petron, T Nehrkorn, J Eluszkiewicz, J Henderson, D Wen, J Lin, M Fischer, C Sweeney and AM Michalak (2012), North American CO2 exchange: inter-comparison of modeled estimates with results from a fine-scale atmospheric inversion. Biogeosciences, 9 (1) 457-475, issn: 1726-4170, ids: 891PL, [doi: 10.5194/bg-9-457-2012](http://dx.doi.org/10.5194/bg-9-457-2012)

Lenton, A, N Metzl, T Takahashi, M Kuchinke, RJ Matear, T Roy, SC Sutherland, C Sweeney and B Tilbrook (2012), The observed evolution of oceanic pCO(2) and its drivers over the last two decades. Glob. Biogeochem. Cycle, 26 , Art. No. GB2021, issn: 0886-6236, ids: 945HJ, [doi: 10.1029/2011GB004095](http://dx.doi.org/10.1029/2011GB004095)

Miller, J. B., S. J. Lehman, S. A. Montzka, C. Sweeney, B. R. Miller, A. Karion, C. Wolak, E. J. Dlugokencky, J. Southon, J. C. Turnbull, and P. P. Tans (2012), Linking emissions of fossil fuel CO2 and other anthropogenic trace gases using atmospheric (CO2)-C-14, *J. Geophys. Res.-Atmos.*, *117*. doi: 10.1029/2011jd017048.

Brooks, B. G. J., A. R. Desai, B. B. Stephens, D. R. Bowling, S. P. Burns, A. S. Watt, S. L. Heck, and C. Sweeney (2012), Assessing filtering of mountaintop CO2 mole fractions for application to inverse models of biosphere-atmosphere carbon exchange, *Atmos. Chem. Phys.*, *12*(4), 2099-2115. doi: 10.5194/acp-12-2099-2012.

Petron, G., G. Frost, B. R. Miller, A. I. Hirsch, S. A. Montzka, A. Karion, M. Trainer, C. Sweeney, A. E. Andrews, L. Miller, J. Kofler, A. Bar-Ilan, E. J. Dlugokencky, L. Patrick, C. T. Moore, T. B. Ryerson, C. Siso, W. Kolodzey, P. M. Lang, T. Conway, P. Novelli, K. Masarie, B. Hall, D. Guenther, D. Kitzis, J. Miller, D. Welsh, D. Wolfe, W. Neff and P. Tans (2012), Hydrocarbon emissions characterization in the Colorado Front Range: A pilot study. *J. Geophys. Res.-Atmos.* 117 doi: D0430410.1029/2011jd016360

Lauvaux, T., A. E. Schuh, M. Uliasz, S. Richardson, N. Miles, A. E. Andrews, C. Sweeney, L. I. Diaz, D. Martins, P. B. Shepson and K. J. Davis (2012), Constraining the CO2 budget of the corn belt: exploring uncertainties from the assumptions in a mesoscale inverse system. *Atm. Chem. and Phys.* 12(1), 337-354 doi: 10.5194/acp-12-337-2012

**2011**

Kort, E. A., P. K. Patra, K. Ishijima, B. C. Daube, R. Jimenez, J. Elkins, D. Hurst, F. L. Moore, C. Sweeney and S. C. Wofsy (2011), Tropospheric distribution and variability of N(2)O: Evidence for strong tropical emissions. *Geophys. Res. Lett.* 38 doi: L15806 10.1029/2011gl047612

Pickett-Heaps, C. A., P. J. Rayner, R. M. Law, P. Ciais, P. K. Patra, P. Bousquet, P. Peylin, S. Maksyutov, J. Marshall, C. Rodenbeck, R. L. Langenfelds, L. P. Steele, R. J. Francey, P. Tans and C. Sweeney (2011), Atmospheric CO(2) inversion validation using vertical profile measurements: Analysis of four independent inversion models. *J. Geophys. Res.-Atmos.* 116 doi: D12305 10.1029/2010jd014887

Turnbull, J. C., A. Karion, M. L. Fischer, I. Faloona, T. Guilderson, S. J. Lehman, B. R. Miller, J. B. Miller, S. Montzka, T. Sherwood, S. Saripalli, C. Sweeney and P. P. Tans (2011), Assessment of fossil fuel carbon dioxide and other anthropogenic trace gas emissions from airborne measurements over Sacramento, California in spring 2009. 11(2), 705-721 doi: 10.5194/acp-11-705-2011

McNeil, B. I., C. Sweeney and J. A. E. Gibson (2011), Short Note Natural seasonal variability of aragonite saturation state within two Antarctic coastal ocean sites. 23(4), 411-412 doi: 10.1017/s0954102011000204

Basu, S., S. Houweling, W. Peters, C. Sweeney, T. Machida, S. Maksyutov, P. K. Patra, R. Saito, F. Chevallier, Y. Niwa, H. Matsueda and Y. Sawa (2011), The seasonal cycle amplitude of total column CO(2): Factors behind the model-observation mismatch. 116 doi: D23306 10.1029/2011jd016124

**2010**

Karion, A., C. Sweeney, P. Tans and T. Newberger (2010). "AirCore: An Innovative Atmospheric Sampling System." Journal of Atmospheric and Oceanic Technology 27(11): 1839-1853 DOI: 10.1175/2010jtecha1448.1

Crevoisier, C., C. Sweeney, M. Gloor, J. L. Sarmiento and P. P. Tans (2010). Regional US carbon sinks from three-dimensional atmospheric CO2 sampling. Proceedings of the National Academy of Sciences of the United States of America 107(43): 18348-18353 DOI: 10.1073/pnas.0900062107

Kort E.A., A E. Andrews, E Dlugokencky, C Sweeney, A Hirsch, J Eluszkiewicz, T Nehrkorn, S Michalak, B Stephens, C Gerbig, J B. Miller, J Kaplan, S Houweling, B C. Daube, P Tans, and S.C. Wofsy 2010. 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, 7:2, 125-13 doi:10.1080/19438151003767483

McNeil, B., A. Tagliabue and C. Sweeney (2010). A multi-decadal delay in the onset of corrosive 'acidified' waters in the Ross Sea of Antarctica due to strong air-sea CO2 disequilibrium. Geophysical Research Letters 37 DOI: L1960710.1029/2010gl044597

Montes-Hugo, M., C. Sweeney, S. C. Doney, H. Ducklow, R. Frouin, D. G. Martinson, S. Stammerjohn and O. Schofield (2010). Seasonal forcing of summer dissolved inorganic carbon and chlorophyll a on the western shelf of the Antarctic Peninsula. Journal of Geophysical Research-Oceans 115 DOI: C03024 10.1029/2009jc005267

Oltmans, S. J., A. S. Lefohn, J. M. Harris, D. W. Tarasick, A. M. Thompson, H. Wernli, B. J. Johnson, P. C. Novelli, S. A. Montzka, J. D. Ray, L. C. Patrick, C. Sweeney, A. Jefferson, T. Dann, J. Davies, M. Shapiro and B. N. Holben (2010). Enhanced ozone over western North America from biomass burning in Eurasia during April 2008 as seen in surface and profile observations. Atmospheric Environment 44(35): 4497-4509 DOI: 10.1016/j.atmosenv.2010.07.004

Parrish, D. D., K. C. Aikin, S. J. Oltmans, B. J. Johnson, M. Ives and C. Sweeny (2010). Impact of transported background ozone inflow on summertime air quality in a California ozone exceedance area. Atmospheric Chemistry and Physics 10(20): 10093-10109 DOI: 10.5194/acp-10-10093-2010

Wunch, D., G. C. Toon, P. O. Wennberg, S. C. Wofsy, B. B. Stephens, M. L. Fischer, O. Uchino, J. B. Abshire, P. Bernath, S. C. Biraud, J. F. L. Blavier, C. Boone, K. P. Bowman, E. V. Browell, T. Campos, B. J. Connor, B. C. Daube, N. M. Deutscher, M. Diao, J. W. Elkins, C. Gerbig, E. Gottlieb, D. W. T. Griffith, D. F. Hurst, R. Jimenez, G. Keppel-Aleks, E. A. Kort, R. Macatangay, T. Machida, H. Matsueda, F. Moore, I. Morino, S. Park, J. Robinson, C. M. Roehl, Y. Sawa, V. Sherlock, C. Sweeney, T. Tanaka and M. A. Zondlo (2010). Calibration of the Total Carbon Column Observing Network using aircraft profile data. Atmospheric Measurement Techniques 3(5): 1351-1362 DOI: 10.5194/amt-3-1351-2010

Xiong, X. Z., C. D. Barnet, Q. L. Zhuang, T. Machida, C. Sweeney and P. K. Patra (2010). Mid-upper tropospheric methane in the high Northern Hemisphere: Spaceborne observations by AIRS, aircraft measurements, and model simulations. Journal of Geophysical Research-Atmospheres 115 DOI: D19309 10.1029/2009jd013796

Yurganov, L., W. McMillan, C. Wilson, M. Fischer, S. Biraud and C. Sweeney (2010). Carbon monoxide mixing ratios over Oklahoma between 2002 and 2009 retrieved from Atmospheric Emitted Radiance Interferometer spectra. Atmospheric Measurement Techniques 3(5): 1319-1331 DOI: 10.5194/amt-3-1319-2010

**2009**

Andreas Volz-Thomas, J-P. Cammas, C.A.M. Brenninkmeijer, O. Cooper, C. Sweeney A. Waibel. (2009). Civil Aviation Monitors Air Quality and Climate. EM Magazine, October.

Mays, K. L., P. B. Shepson, B. H. Stirm, A. Karion, C. Sweeney and K. R. Gurney (2009). Aircraft-Based Measurements of the Carbon Footprint of Indianapolis. Environmental Science & Technology 43(20): 7816-7823 DOI: 10.1021/es901326b

Martins, D. K., C. Sweeney, B. H. Stirm, and P. B. Shepson. 2009, Regional surface flux of CO2 inferred from changes in the advected CO2 column density, *Agric. For. Meteorol.*, *149*(10), 1674-1685.DOI: 10.1016/j.agrformet.2009.05.005

Gupta, P., D. Noone, J. Galewsky, C. Sweeney and B. H. Vaughn (2009a). A new laser-based, field-deployable analyzer for laboratory-class stable isotope measurements in water. Geochimica Et Cosmochimica Acta 73(13): A480-A480

Gupta, P., D. Noone, J. Galewsky, C. Sweeney, B. H. Vaughn. (2009b). Demonstration of high precision continuous measurements of water isotopologues in laboratory and remote field deployments using WS-CRDS technology. *Rapid Communications in Mass Spectrometry*. 2534-2542. DOI: 10.1002/rcm.4100

Takahashi, T., S. C. Sutherland, R. Wanninkhof, C. Sweeney, R. A. Feely, D. W. Chipman, B. Hales, G. Friederich, F. Chavez, A. Watson, D. C. E. Bakker, U. Schuster, N. Metzl, H. Yoshikawa-Inoue, M. Ishii, T. Midorikawa, C. Sabine, M. Hopemma, J. Olafsson, T. S. Arnarson, B. Tilbrook, T. Johannessen, A. Olsen, R. Bellerby, H. J. W. de Baar, Y. Nojiri, C. S. Wong, B. Delille (2009). Climatological Mean and Decadal Change in Surface Ocean pCO2, and Net Sea-air CO2 Flux over the Global Oceans. *Deep-Sea Research II*, 2009. doi:10.1016/j.dsr2.2008.12.009

Wanninkhof, R., W. E. Asher, D. T. Ho, C. Sweeney, W. R. McGillis (2009). Advances in Quantifying Air-Sea Gas Exchange and Environmental Forcing. Annual Review of Marine Sciences 1. doi:10.1146/annurev.marine.010908.163742

**2008**

Campbell, J. E., G. R. Carmichael, T. Chai, M. Mena-Carrasco, Y. Tang, D. R. Blake, N. J. Blake, S. A. Vay, G. J. Collatz, I. Baker, J. A. Berry, S. A. Montzka, C. Sweeney, J. L. Schnoor, and C. O. Stanier. 2008. Photosynthetic Control of Atmospheric Carbonyl Sulfide During the Growing Season. Science 322:1085-1088. DOI: 10.1126/science.1164015

Xiong, X. Z., C. Barnet, E. Maddy, C. Sweeney, X. P. Liu, L. H. Zhou and M. Goldberg (2008). Characterization and validation of methane products from the Atmospheric Infrared Sounder (AIRS). *Journal of Geophysical Research-Biogeosciences* 113. doi:10.1029/2007JG000500.

Maddy, E. S., C. D. Barnet, M. Goldberg, C. Sweeney and X. Liu (2008). CO2 retrievals from the Atmospheric Infrared Sounder: Methodology and validation. *Journal of Geophysical Research-Atmospheres* 113(D11) DOI:10.1029/2007.

**2007**

Sweeney, C., E. Gloor, A. R. Jacobson, R. M. Key, G. McKinley, J. L. Sarmiento and R. Wanninkhof (2007). Constraining global air-sea gas exchange for CO2 with recent bomb C-14 measurements. *Global Biogeochemical Cycles* 21 (2). DOI: 10.1029/2006GB002784

Peters, W., A. R. Jacobson, C. Sweeney, A. E. Andrews, T. J. Conway, K. Masarie, J. B. Miller, L. M. P. Bruhwiler, G. Petron, A. I. Hirsch, D. E. J. Worthy, G. R. van der Werf, J. T. Randerson, P. O. Wennberg, M. C. Krol and P. P. Tans (2007). An atmospheric perspective on North American carbon dioxide exchange: CarbonTracker. *Proceedings of the National Academy of Sciences of the United States of America* 104(48): 18925-18930. DOI: 10.1072/pnas.07089861074

Yang, Z., R.A. Washenfelder, G. Keppel-Aleks, P.O. Wennberg, N.Y. Krakauer, J.T. Randerson, P.P.Tans and C. Sweeney. (2007). New constraints on Northern Hemisphere growing season net flux. *Geophysical Research Letters*, 34 (12). DOI: 10.1029/2007GL029742

Stephens, B. B., K. R. Gurney, P. P. Tans, C. Sweeney, W. Peters, L. Bruhwiler, P. Ciais, M. Ramonet, P. Bousquet, T. Nakazawa, S. Aoki, T. Machida, G. Inoue, N. Vinnichenko, J. Lloyd, A. Jordan, M. Heimann, O. Shibistova, R. L. Langenfelds, L. P. Steele, R. J. Francey and A. S. Denning (2007). "Weak northern and strong tropical land carbon uptake from vertical profiles of atmospheric CO2." Science 316(5832): 1732-1735. DOI: 10.1126/science.1137004

Montzka, S. A., P. Calvert, B. D. Hall, J. W. Elkins, T. J. Conway, P. P. Tans and C. Sweeney (2007). "On the global distribution, seasonality, and budget of atmospheric carbonyl sulfide (COS) and some similarities to CO2." Journal of Geophysical Research-Atmospheres 112(D9). DOI: 10.1029/2006JD007665

**2006**

Crevoisier, C., M. Gloor, E. Gloaguen, L. W. Horowitz, J. L. Sarmiento, C. Sweeney, and P. P. Tans, (2006). A direct carbon budgeting approach to infer carbon sources and sinks. Design and synthetic application to complement the NACP observation network. *Tellus B*, 58: 366-375. DOI: 10.1111/j.1600-0889.2006.00214.x

Gnanadesikan, A., Dixon, K.W., Griffies, S.M., Balaji, V., Barreiro, M., Beesley, J.A., Cooke, W.F., Delworth, T.L., Gerdes, R., Harrison, M.J., Held, I.M., Hurlin, W.J., Lee, H.C., Liang, Z., Nong, G., Pacanowski, R.C., Rosati, A., Russell, J., Samuels, B.L., Song, Q., Spelman, M.J., Stouffer, R.J., Sweeney, C., Vecchi, G., Winton, M., Wittenberg, A.T., Zeng, F., Zhang, R., & Dunne, J.P. (2006). GFDL's CM2 global coupled climate models. Part II: The baseline ocean simulation. *Journal of Climate,* 19(5), 675-697

**2005**

Sweeney, C., A. Gnanadesikan, S. M. Griffies, M. J. Harrison, A. J. Rosati, and B. L. Samuels, 2005. Impacts of Shortwave Penetration Depth on Large-Scale Ocean Circulation and Heat Transport, *Journal of Physical Oceanography*, 35(6): 1103–1119

**2003**

Sweeney, C. 2003. The annual cycle of surface CO2 and O2 in the Ross Sea: A model for gas exchange on the continental shelves of Antarctica. In: Biogeochemistry of the Ross Sea, edited by G.R. DiTullio and R.B. Dunbar, Antarctic Research Series, 78: 295-312.

**2002**

Takahashi, T., S. C. Sutherland, C. Sweeney, A. Poisson, N. Metzl, B. Tilbrook, N. Bates, R. Wanninkhof, R. A. Feely, C. Sabine, J. Olafsson, 2002. Biological and temperature effects on seasonal changes of pCO2 in global surface ocean. Deep-Sea Research II, 49: 1601–1622.

Sweeney, C., T. Takahashi, R. Wanninkhof, A. Gnanadesikan , 2002. Spatial and temporal variability of surface water pCO2 and sampling strategies. Report prepared for the NOAA Advisory Meeting for Sea-air CO2 Flux Program, October 8-10, 2000, Boulder, CO.

**2000**

Sweeney, C., D. A. Hansell, C. A. Carlson, L. A. Codispoti, L. I. Gordon, J. Marra, F. J. Millero, W. O. Smith and T. Takahashi (2000). "Biogeochemical regimes, net community production and carbon export in the Ross Sea, Antarctica." Deep-Sea Research Part Ii-Topical Studies in Oceanography 47(15-16): 3369-3394.

Sweeney, C., W. O. Smith, B. Hales, R. R. Bidigare, C. A. Carlson, L. A. Codispoti, L. I. Gordon, D. A. Hansell, F. J. Millero, M. O. Park and T. Takahashi (2000). "Nutrient and carbon removal ratios and fluxes in the Ross Sea, Antarctica." Deep-Sea Research Part Ii-Topical Studies in Oceanography 47(15-16): 3395-3421.

Gordon, L. I., L. A. Codispoti, J. C. Jennings, F. J. Millero, J. M. Morrison and C. Sweeney (2000). "Seasonal evolution of hydrographic properties in the Ross Sea, Antarctica, 1996-1997." Deep-Sea Research Part Ii-Topical Studies in Oceanography 47(15-16): 3095-3117.

Langdon, C., T. Takahashi, C. Sweeney, D. Chipman, J. Goddard, F. Marubini, H. Aceves, H. Barnett and M. J. Atkinson (2000). "Effect of calcium carbonate saturation state on the calcification rate of an experimental coral reef." Global Biogeochemical Cycles 14(2): 639-654.

**1999**

Sweeney, C., 1999. The Diel Carbon Cycle of the Biosphere II Ocean. Ecological Engineering 13: 235-247.

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