Eric A. Kort

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Professional Appointments

Director of Atmospheric Chemistry Department & Scientific Member 2026-
Max Planck Institute for Chemistry (MPIC), Mainz, Germany
Adjunct Professor 2026-
Professor 2024-2026
Associate Chair for Graduate Studies (2022-2025)
Associate Professor (with tenure) 2019-2024
Assistant Professor 2013-2019
Climate and Space Sciences and Engineering, Applied Physics
University of Michigan, Ann Arbor, MI
W. M. Keck Institute for Space Studies Postdoctoral Fellow 2011-2013
Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA

Education

Ph.D., Applied Physics, Harvard University, Cambridge, MA 2011
S.M., Applied Physics, Harvard University, Cambridge, MA 2005
B.A., Physics (with Honors), minor Mathematics, Pomona College, Claremont, CA 2004

Recognitions

AGU Atmospheric Sciences Ascent Award 2025
UM CoE Monroe-Brown Foundation Research Excellence Award 2024-2025
NCAR Affiliate Scientist 2022-2025
UM CLASP Department Faculty Award 2023
NASA Group Achievement Award (OCO-2 Science Team) 2018
NSF CAREER award 2017
NASA New Investigator Program (NIP) in Earth Science award 2014
Early Career Award, Gordon Conference for Atmospheric Chemistry,
Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS) 2013
W. M. Keck Institute for Space Studies Postdoctoral Fellowship 2011-2013
National Center for Atmospheric Research
Advanced Study Program Postdoctoral Fellowship (Declined) 2011
Outstanding Student Paper Award, Fall Meeting, AGU 2010
National Defense Science and Engineering Graduate (NDSEG) Fellowship 2007-2010
Edmunds Physics Prize, Pomona College 2004
Tileston Physics Prize, Pomona College 2003

Teaching

University of Michigan
CLIMATE 105: Our Changing Atmosphere Winter 2025

CLIMATE 320: Earth System Evolution	Fall 2014- 2016, 2018, 2021-2023
CLIMATE 479: Atmospheric Chemistry	Winter 2021, Winter 2023, Fall 2024
CLIMATE 140: Climate and the Media	Winter 2022, 2024
AOSS 475: Earth System Interactions	Winter 2014-2019
AOSS 749: AOSS Seminar	Fall 2014 & Winter 2015

Co-creator/director of Climate Change Solutions graduate certificate program 2020-2025

Airborne Campaigns

(* instrument PI and/or mission scientist, ** overall project PI)

FarmFlux, Colorado, Texas, Iowa, Idaho, California, 2026-2027
**Flaring & Fossil Fuels: Uncovering Emissions and Losses (F^3UEL), Gulf of Mexico/TX, Summer 2020; North Dakota/Alaska/California, Summer 2021; Gulf of Mexico, Spring 2022, Fall 2022
**MAIZE: Measurement of Agriculture Investigating farm-Zone Emissions of N2O, Iowa/Nebraska, Spring 2021; Spring 2022
**AVIRIS-NG COVID: Directly observing changes in California Methane Emissions due to Covid-19, California, Summer 2020
** RAPID: Time-critical airborne measurements to quantify ozone impacts of emissions changes during the Covid-19 pandemic response in the U.S., Houston & Denver, Summer 2020
East-Coast Outflow Greenhouse Gas study, Covid response (ECO-Covid), East Coast US, Spring 2020
* East-Coast Outflow Greenhouse Gas study (ECO-GHG), East Coast US, Spring 2018
Offshore oil & gas emissions assessment, Gulf of Mexico, Winter 2018
* Greenhouse Emissions in the Midwest (GEM), Minnesota, Summer 2017; GEM-2, Winter 2018; GEM-3, Spring 2018
** Fertilizer Emissions Airborne Study (FEAST), Colorado & Mississippi River Valley, Spring 2017
* The O_2/N_2 Ratio and CO_2 Airborne Southern Ocean Study (ORCAS), Chile, Winter 2016
** Twin Otter Project Defining Oil/gas Well emissioNs (TOPDOWN), New Mexico** & Pennsylvania*, Spring 2015
* TOPDOWN, North Dakota, Colorado, Spring 2014
* Barnett methane emissions study (Environmental Defense Fund), Denton, TX, Fall 2013
HIAPER Pole to Pole Observations (HIPPO-5), Pole to Pole, Summer-Fall 2011; HIPPO-4, Pole to Pole, Spring-Summer 2011
California Nexus, Research at the Nexus of Air Quality and Climate Change (CALNEX), Ontario, CA, Spring 2010
HIPPO-2, Pole to Pole, Fall 2009; HIPPO-3, Pole to Pole, Spring 2010;
HIPPO-1, Pole to Pole, Winter 2009
Stratosphere-Troposphere Analyses of Regional Transport (START08), Broomfield, CO, Spring 2008

Satellite Science Teams

NASA Orbiting Carbon Observatory 2 (OCO-2) Science Team	2015-2025
NASA Orbiting Carbon Observatory 3 (OCO-3) Science Team	2018-2025
NASA Cyclone Global Navigation System Satellite (CYGNSS) Science Team	2021-2025

Service Activities

Scientific Advisory Boards/Committees

Chair, Carbon Mapper Inc. (2021-)
Member, European Integrated Carbon Observing System (ICOS) (2023-)
Member, Permian Methane Project, Environmental Defense Fund (2019-2022)

National Academies of Sciences, Engineering, and Medicine

Member, Committee on Earth Science and Applications from Space (CESAS) (2023-2026)
Member, Committee on Future Use of NASA Airborne Platforms to Advance Earth Science Priorities (2020-2021)

International workshops/reports/committees

Participant, Science and Technology forum, Japan (2022)
Author/Participant, European Commission Joint Research Centre, Atmospheric monitoring and inverse modeling for verification of GHG inventories (2017-2018)
Author/Participant, Japanese National Institute for Environmental Studies (NIES), A guidebook on the use of satellite greenhouse gases observation data for verification of greenhouse gases emission inventories (2017-2018)
Co-Lead, Linde Center, Caltech, Workshop Towards Addressing Major Gaps in the Global Methane Budget (2017)
Member, World Meteorological Organization, Integrated Global GHG Information System (IG3IS) (2016-2020)

Other

Co-chair, Methane Session, Decarbonization Congress, Society of Petroleum Engineers, Houston, TX (2025)
Topic Chair, International Bureau of Weights and Measures/World Meteorology Organization Metrology for Climate Action workshop (2022)
Co-chair of NACP breakout session on "Quantification and attribution of anthropogenic methane emissions in North America" (2015)
Co-organizer Workshop on Measurements in Oil and Gas Production Regions, NOAA ESRL (2015)
Public forum on Four Corners methane, Farmington, New Mexico (2015)
JPL Carbon Cycle & Ecosystems Initiative steering committee member (2013)

University of Michigan

Associate Chair for Graduate Studies, CLaSP Department (2022-2025)
Co-lead UM ClaSP department AGU Bridge program (2022-2025)
Co-creator/director of Climate Change Solutions graduate certificate program (2020-2025)
Michigan Engineering ONRAMP Faculty Advisory Board (2021-2025)
Reviewer for Rackham Merit Fellowship (2022-2023)
Launch Committee for Dr. Jim Raines (2022-2023)
College of Engineering Energy Institute visioning committee (2021-2022)
Climate and Space Sciences and Engineering graduate admissions chair (2021-2022); graduate committee (2020-2022); curriculum committee (2020-2022); research excellence committee (2019-2020); mentoring committee (2018-2020); executive committee (2016-2020); graduate admission committee (2015-2019)
President's Commission on Carbon Neutrality: Carbon Accounting Sub Group (2019)
Faculty transition team for new School of Sustainability at University of Michigan (2016-2017)
Michigan Geophysical Union judge (2014, 2015)
University of Michigan College of Engineering Graduate Symposium conference judge (2015)
Atmospheric, Oceanic and Space Sciences Seminar co-organizer (2014-2015)

President Schlissel's committee on Greenhouse Gas Reduction, University of Michigan (2014-2015)

UM Integrated Assessment on Hydraulic Fracturing in Michigan (consulting member; 2014-2015)

Qualifying and prospectus exams: Anna Savage (2014, Applied Physics), Ben Isaacoff (2014, Applied Physics), Jamie MacLennan (2014, Applied Physics), Rebecca Craig (2014, Chemistry), Liz Ultee (2015, AOSS), Judit Szente (2015, AOSS), Zach Butterfield (2015, CLaSP), Rahul Gogna (2016, Applied Physics), Samantha Basile (2016/2017, CLaSP), Anthony Torres (2016/2017, CLaSP), Shane Coffing (2017, Applied Physics), Dien Wu (2017, U. of Utah), Brian Swiger (2018, CLaSP), Yifan Guan (2020, CLaSP), Yingxiao Zhang (2021, CLaSP), Erica Whiting (2023, CLaSP), Maya Fields (2023, CLaSP), Maria Salazar (2024, CLaSP).

PhD committees: Chunpeng Wang (2014, AOSS), Anna Savage (2017, Applied Physics), Rebecca Craig (2018, Chemistry), Matthew Wozniak (2019, CLaSP), Dien Wu (2020, Utah), Zachary Butterfield (2020, CLaSP), Morgan Loechli (2023, CLaSP), Yifan Guan (2023, CLaSP), Katlyn Mackay (2023, Memorial University, Newfoundland), Anthony Torres (2023, CLaSP).

PhD committees chaired/co-chaired: John Ware (2018, Physics), Alexander (Sandro) Gvakharia (2019, Applied Physics), Emily Yang (2022, CLaSP), Alan Gorchov Negron (2023, CLaSP), Daniel Huber (2023, CLaSP), Natasha Dacic (2024, CLaSP), Erica Whiting (2026, CLaSP).

Review activities

Associate Editor for Atmospheric Chemistry and Physics (2026-)

Peer reviewer for *Nature, PNAS, Nature Geoscience, Geophysical Research Letters, Nature Scientific Reports, Atmospheric Chemistry and Physics*, *Journal of Geophysical Research*, *Global Biogeochemical Cycles, Environmental Pollution*, *Atmospheric Measurement Techniques*, and *Environmental Science and Technology*

Proposal reviewer & panelist (*NASA, NSF, NERC, NSERC, Belmont Forum, Netherlands Space Office, Swedish National Space Board*)

Invited Seminars

Max Planck Institute for Biogeochemistry, Jena, Germany	2026
Harvard University, Environmental Science & Engineering (ESE)	2026
University of Maryland, Earth System Science Interdisciplinary Center (ESSIC)	2025
Max Planck Institute for Chemistry, Mainz, Germany	2025
Stanford, Energy Science and Engineering	2024
Schlumberger-Doll Research, Sustainability and Emissions	2023
NASA Jet Propulsion Laboratory, Carbon Cycle seminar	2022
Andrews University, Chemistry & Biochemistry	2019
University of California- Berkeley, Berkeley Atmospheric Sciences Center Seminar	2017
University of Colorado- Boulder, Atmospheric and Oceanic Sciences	2017
University of Washington, Atmospheric Science	2017
Max Planck Institute for Biogeochemistry, Jena, Germany	2017
California Institute of Technology, Environmental Science and Engineering	2017
University of Toronto, Center for Global Change Science Distinguished Lecturer Series	2017
Dartmouth College, Geography Department	2017
NASA GMAO, Goddard Space Flight Center	2015
NOAA ESRL Chemical Science Division	2014
UiT The Arctic University of Norway, (CAGE) Centre for Arctic Gas Hydrate, Environment, and Climate	2013

Boston University, Terrestrial Biogeochemistry	2013
Massachusetts Institute of Technology, Civil & Environmental Engineering	2013
University of Michigan, Atmospheric, Oceanic and Space Sciences	2013
Jet Propulsion Laboratory, Carbon Science	2013
Pomona College, Physics Department	2012
UC Irvine, Earth System Science	2012
UCLA, Atmospheric and Oceanic Sciences	2012
Caltech, ESE & Society discussion group	2012
Jet Propulsion Laboratory, Carbon Science	2011
JAMSTEC, Yokohama, Japan	2010

Book Chapters, Reports, Conference abstracts

McDonald BC, He J, Harkins C, de Gouw J, Elguindi N, Duren R, Gilman J, Kort EA, Miller CE, Peischl J, Petron G, Thompson C, *A Review of U.S. Oil and Gas Methane and Air Pollutant Emissions*, Air and Waste Management Environmental Manager Magazine, 2023.

Kort EA, McKain K, Chapter 13 - Aircraft vertical profile measurements for evaluation of satellite retrievals of long-lived trace gases, chapter in *Field Measurements for Passive Environmental Remote Sensing*, Elsevier, 235-244, https://doi.org/10.1016/B978-0-12-823953-7.00020-4, 2023.

Report co-author: National Academies of Sciences, Engineering, and Medicine. *Airborne Platforms to Advance NASA Earth System Science Priorities: Assessing the Future Need for a Large Aircraft*. Washington, DC: The National Academies Press. https://doi.org/10.17226/26079, 2021.

Report co-author: *Atmospheric monitoring and inverse modelling for verification of greenhouse gas inventories*, EUR 29276 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-79-88938-7 (online),978-92-79-88939-4 (print), doi:10.2760/759928 (online),10.2760/02681 (print), JRC111789, 2018.

Chapter 4 lead author, Matsunaga T. and Maksyutov S. (eds.) *A Guidebook on the Use of Satellite Greenhouse Gases Observation Data to Evaluate and Improve Greenhouse Gas Emission Inventories*, Satellite Observation Center, National Institute for Environmental Studies, Japan, 129 pp. 2018.

Publications

Peer-reviewed Publications:

Google Scholar: Citations = 15,717, h-index = 63, i-10 index = 119

(indicates UM group member or MPIC department member)

127. Reuland FE, Adams T, Sherwin E, El Abbadi SH, Kort EA, Brandt AR, Evaluating space-based methane detection through a one-year blind test, Nature, https://doi.org/10.1038/s41586-026-11115-0, 2026.

126. Andersen ST, Wüst L, Türk GNTE, Dewald P, Nelson C, Schuladen J, Fischer H, Petäjä T, Lelieveld J, Kort EA, Crowley JN, Nighttime vertical gradients of NO and NO2 in a boreal forest reveal short, height-dependent atmospheric lifetimes of NOx, Environmental Science: Atmospheres, https://doi.org/10.1039/d6ea00131a, 2026.

125. Riaz A, Sun K, Baker BD, Buma B, Cady-Pereira KE, Miller CC, Eddy III WC, Farris BM, Kampe TU, Kort EA, Leisso NP, Spurr R, Stuchiner ER, Yang WH, Towards a remote-sensing solution to quantify nitrous oxide emissions by integrating shortwave and thermal infrared bands, Atmos. Meas. Tech., https://doi.org/10.5194/amt-19-5169-2026, 2026.

124. Ciais P, Peng S, Chang J, Li F, Zhu Q, Yuan K, Hugelius G, Li H, Cai Y, Chevallier F, Tibrewal K, Kort EA, Arndt K, Watts J, Buma B, Besic N, Palmer PI, Cadillo-Quiroz H, Euskirchen E, Gondwe MJ, Hoyt A, Jackson R, Malone S, Moneverde D, Natali S, Ramonet M, Rey-Sanchez C, Sagang LB, Schuur EAG, Vargas R, Varner R, Zhang Z, Poulter B, A Global Methane Observation System to Reduce Uncertainty for Anthropogenic and Natural Sources and Sinks for Detecting and Attributing Climate Feedbacks, Advanced Science, https://doi.org/10.1002/advs.76624, 2026.

123. Ort L, Frankenberg C, Dadheech N, Yoon J, Turner AJ, Bloom AA, Konopka P, Lachnit HC, Hoor P, Lelieveld J, Kort EA, Fischer H, Airborne Observations Reveal Underestimated Riverine Methane Emissions Across the Amazon, Geophysical Research Letters, https://doi.org/10.1029/2026GL122310, 2026.

122. Adams TJ, Plant G, Kort EA, Deriving cropland N2O emissions from space-based NO2 observations, Atmos. Chem. Phys., https://doi.org/10.5194/acp-26-5517-2026, 2026.

121. Zhang X, Maasakkers JD, de Jong TA, Tol P, Reuland F, Brandt AR, Kort EA, Adams TJ, Aben I, *HyperGas* 1.0: a python package for analyzing hyperspectral data for greenhouse gases from retrieval to emission rate quantification, Geoscientific Model Development, https://doi.org/10.5194/gmd-19-5979-2026, 2026.

120. Whiting E, Plant G, Kort EA, Aben I, Biener KJ, Leguijt G, Maasakkers JD, Space-based observation of global increase in urban methane emissions from 2019-2023, Proceedings of the National Academy of Science, https://doi.org/10.1073/pnas.2504211123, 2026.

119. Plant G, Kort EA, Vimont I, Sweeney C, *Airborne Measurements Suggest That Halocarbon Emissions from the New York City Urban Region Have Comparable Climate Impacts to Its Methane Emissions*, Environ. Sci. Technol., https://doi.org/10.1021/acs.est.5c12757, 2026.

118. Steiner A, Wozniak MC, Zhang Y, Ault AP, Kort EA, DeCola P, Lersch TL, Casuccio GS, Reilly KS, *Lidar-based observations of pollen above a mixed hardwood forest in the United States*, J. Geophys. Res. Atmospheres, https://doi.org/10.1029/2025JD044361, 2025.

117. Duren R, Cusworth D, Ayasse A, Howell K, Diamond A, Scarpelli T, Kim J, O'neill K, Lai-Norling J, Thorpe A, Zandbergen SR, Shaw L, Keremedjiev M, Guido J, Giuliano P, Goldstein M, Nallapu R, Barensen G, Thompson DR, Roth K, Jensen D, Eastwood M, Reuland F, Adams T, Brandt A, Kort EA, Mason J, Green RO, *The Carbon Mapper emissions monitoring system*, Atmos. Meas. Tech., https://doi.org/10.5194/amt-18-6933-2025, 2025.

116. Eastwood ML, Thompson DR, Green RO, Adams TJ, Brandt AR, Brodrick PG, Chlus A, Kort EA, Reuland F, Thorpe AK, *Direct measurement of plume velocity to characterize point source emissions,* Proceedings of the National Academy of Science, https://doi.org/10.1073/pnas.2507350122, 2025.

115. Xiong Y, Kort EA, Bloom AA, Gerlein-Safdi C, Pu T, Bilir E, *Limited evidence that tropical inundation and precipitation powered the 2020–2022 methane surge*. Communications Earth & *Environment* **6**, 450, https://doi.org/10.1038/s43247-025-02438-3, 2025.

114. Dacic N, Plant G, Kort EA, *Airborne Measurements Reveal High Spatiotemporal Variation and the Heavy-Tail Characteristic of Nitrous Oxide Emissions in Iowa*, J. Geophys. Res. Atmospheres, https://doi.org/10.1029/2024JD041403, 2024.

113. Nevison CD, Liang Q, Newman PA, Stephens BB, Dutton G, Lan X, Commane R, Gonzalez Y, Kort E, *Observational and model evidence for a prominent stratospheric influence on variability in tropospheric nitrous oxide*, Atmos. Chem. Phys., https://doi.org/10.5194/acp-24-10513-2024, 2024.

112. Wilmot TY, Lin JC, Wu D, Oda T, Kort EA, *Toward a satellite-based monitoring system for urban CO2 emissions in support of global collective climate mitigation actions*, Environmental Research Letters, https://doi.org/10.1088/1748-9326/ad6017, 2024.

111. Pu T, Gerlein-Safdi C, Xiong Y, Li M, Kort EA, Bloom AA, *Berkeley-RWAWC: A New CYGNSS-Based Watermask Unveils Unique Observations of Seasonal Dynamics in the Tropics*, Water Resources Research, https://doi.org/10.1029/2024WR037060, 2024.

110. Huber D, Kort EA, AL Steiner, *Soil Moisture, Soil NOx and Regional Air Quality in the Agricultural Central United States*, J. Geophys. Res. Atmospheres, https://doi.org/10.1029/2024JD041015, 2024.

109. Oldfield EE, Lavallee JM, Blesh J, Bradford MA, Cameron-Harp M, Cotrufo MF, Eagle AJ, Eash L, Even RG, Kuebbing S, Kort EA, Lark TJ, Latka C, Lin Y, Machmuller MB, O'Neill B Raffeld AM, RoyChowdhury T, Rudek J, Sanderman J, Sprunger CD, Toombs TP, Aragon NU, Vidal M, Woolf D, Zelikova TJ, Gordon DR, *Greenhouse gas mitigation on croplands: clarifying the debate on knowns, unknowns and risks to move forward with effective management interventions*, Carbon Management, 15, 1, 2365896, https://doi.org/10.1080/17583004.2024.2365896, 2024.

108. Gorchov Negron AM, Kort EA, Plant G, Brandt AR, Chen Y, Hausman C, Smith ML, *Measurement-based carbon intensity of US offshore oil and gas production*, Environmental Research Letters, https://doi.org/10.1088/1748-9326/ad489d, 2024.

107. Biener KJ, Gorchov Negron AM, Kort EA, Ayasse AK, Chen Y, MacLean JP, McKeever J, *Temporal Variation and Persistence of Methane Emissions from Shallow Water Oil and Gas Production in the Gulf of Mexico*, Environ. Sci. Technol., https://doi.org/10.1021/acs.est.3c08066, 2024.

106. Li M, Kort EA, Bloom AA, Wu D, Plant G, Gerlein-Safdi C, Pu T, *Underestimated Dry Season Methane Emissions from Wetlands in the Pantanal*, Environ. Sci. Technol., https://doi.org/10.1021/acs.est.3c09250, 2024.

105. Jin Y, Keeling RF, Stephens BB, Long MC, Patra PK, Rodenbeck C, Morgan EJ, Kort EA, Sweeney C, *Improved Atmospheric Constraints on Southern Ocean CO2 Exchange*, Proceedings of the National Academy of Science, https://doi.org/10.1073/pnas.2309333121, 2024.

104. Plant G, Kort EA, Gorchov Negron AM, Chen Y, Fordice G, Harkins C, *In situ sampling of NOx emissions from United States natural gas flares reveals heavy-tail emission characteristic*, Environ. Sci. Technol., https://doi.org/10.1021/acs.est.3c08095, 2024.

103. Pühl M, Roiger A, Fiehn A, Gorchov Negron AM, Kort EA, Schwietzke S, Pisso I, Foulds A, Lee J, France JL, Jones AE, Lowry D, Fisher RE, Huang L, Shaw J, Bateson P, Andrews S, Young S, Dominutti P, Lachlan-Cope T, Weiss A, Allen G, *Aircraft-based mass balance estimate of methane emissions from offshore gas facilities in the southern North Sea*, Atmos. Chem. Phys., 24, 1005–1024, https://doi.org/10.5194/acp-24-1005-2024, 2024.

102. Roten D, Lin JC, Das S, Kort EA, *Constraining Sector-specific CO2 Fluxes using Space-based XCO2 Observations over the Los Angeles Basin*, Geophysical Research Letters, https://doi.org/10.1029/2023GL104376, 2023.

101. Gorchov Negron AM, Kort EA, Chen Y, Brandt AR, Smith ML, Plant G, Ayasse AK, Schwietzke S, Zavala-Araiza D, Hausman C, Adames-Corraliza AF, *Excess methane emissions from shallow water platforms elevate the carbon intensity of US Gulf of Mexico oil and gas production*, Proceedings of the National Academy of Science, https://doi.org/10.1073/pnas.2215275120, 2023.

100. Huber DE, Steiner AL, Kort EA, *Sensitivity of Modeled Soil NOx Emissions to Soil Moisture*, J. Geophys. Res. Atmospheres, https://doi.org/10.1029/2022JD037611, 2023.

99. Krysztofiak G, Catoire V, Dudok de Wit T, Kinnison DE, Ravishankara AR, Brocchi V, Atlas E, Bozem H, Commane R, D'Amato F, Daube B, Diskin GS, Engel A, Friedl-Vallon F, Hintsa E, Hurst DF, Hoor P, Jegou F, Jucks KW, Kleinbohl A, Kullmann H, Kort EA, McKain K, Moore FL, Obersteiner F, Gonzalez Ramos Y, Schuck T, Toon GC, Viciani S, Wetzel G, Williams J, Wofsy SC, *N_2O temporal variability from the middle troposphere to the middle stratosphere based on airborne and balloon-borne observations during the period 1987-2018*, Atmosphere, https://doi.org/10.3390/atmos14030585, 2023.

98. Lal R, Kort EA, *Observing system choice can minimize interference of the biosphere in studies of urban CO2 emissions*, J. Geophys. Res. Atmospheres, https://doi.org/10.1029/2022JD037452, 2023.

97. Sherwin ED, Rutherford JS, Chen Y, Aminfard S, Kort EA, Jackson RB, Brandt AR, *Single-blind validation of space-based point-source detection and quantification of onshore methane emissions*, Scientific Reports **13**, 3836, https://doi.org/10.1038/s41598-023-30761-2, 2023.

96. Yang EG, Kort EA, Ott LE, Oda T, Lin JC, *Using Space-Based CO2 and NO2 Observations to Estimate Urban CO2 Emissions*, J. Geophys. Res. Atmospheres, https://doi.org/10.1029/2022JD037736, 2023.

95. Thorpe AK, Kort EA, Cusworth DH, Ayasse AK, Bue BD, Yadav V, Thompson D, Frankenberg C, Herner J, Falk M, Lozo CJ, Langfitt Q, Wilhelm SF, Eggers R, Green RO, Miller CE, Duren RM, *Methane emissions decline from reduced oil, natural gas, and refinery production during COVID-19*, Environmental Research Communications, https://doi.org/10.1088/2515-7620/acb5e5, 2023.

94. Plant G, Kort EA, Brandt A, Chen Y, Fordice G, Gorchov Negron AM, Schwietzke S, Smith M, Zavala-Araiza D, *Inefficient and unlit natural gas flares both emit large quantities of methane,* Science, https://doi.org/10.1126/science.abq0385, 2022.

93. Meyer AG, Lindenmaier R, Heerah S, Benedict KB, Kort EA, Peischl J, Dubey M, *Using Multiscale Ethane/Methane Observations to Attribute Coal Mine Vent Emissions in the San Juan Basin from 2013–2021*, J. Geophys. Res. Atmospheres, doi: http://dx.doi.org/10.1029/2022JD037092, 2022.

92. Ayasse AK, Thorpe AK, Cusworth DH, Kort EA, Gorchov Negron AM, Heckler J, Asner G, Duren RM, *Methane remote sensing and emission quantification of offshore shallow water oil and gas platforms in the Gulf of Mexico*, Environ. Res. Lett. **17** 084039, doi: https://doi.org/10.1088/1748-9326/ac8566, 2022.

91. Chen Y, Sherwin ED, Berman ESF, Jones BB, Gordon MP, Wetherley EB, Kort EA, Brandt AR, *Quantifying Regional Methane Emissions in the New Mexico Permian Basin with a Comprehensive Aerial Survey*, Environ. Sci. Technol., https://doi.org/10.1021/acs.est.1c06458, 2022.

90. Hegarty JD, Cady-Pereira KE, Payne VH, Kulawik SS, Worden JR, Kantchev V, Worden HM, McKain K, Pittman JV, Commane R, Daube BC, Kort EA, *Validation and error estimation of AIRS MUSES CO Profiles with HIPPO, ATom and NOAA GML aircraft observations*, Atmos. Meas. Tech., 15, 205-223, https://doi.org/10.5194/amt-15-205-2022, 2022.

89. Patra PK, Dlugokencky EJ, Elkins JW, Dutton GS, Tohjima Y, Sasakawa M, Ito A, Weiss RF, Manizza M, Krummel PB, Prinn RG, O'Doherty S, Bianchi D, Nevison C, Solazzo E, Lee H, Joo, S, Kort EA, Maity S, Masayuki T, *Forward and inverse modelling of atmospheric nitrous oxide*

using MIROC4-atmospheric chemistry-transport model, Journal of the Meteorological Society of Japan, doi:10.2151/jmsj.2022-018, 2022.

88. Plant G, Kort EA, Murray LT, Maasakkers JD, Aben I, *Evaluating urban methane emissions from space using TROPOMI methane and carbon monoxide observations*, Remote Sensing of Environment, 268, 112756, https://doi.org/10.1016/j.rse.2021.112756, 2022.

87. Long MC, Stephens BB, McKain K, Sweeney C, Keeling RF, Kort EA, Morgan EJ, Bent JD, Chandra N, Chevallier F, Commane R, Daube BC, Krummel PB, Loh Z, Luijkx IT, Munro D, Patra P, Peters W, Ramonet M, Rodenbeck C, Stavert A, Tans P, Wofsy SC, *Strong Southern Ocean carbon uptake evident in airborne observations*, Science, 374, 1275-1280, doi: 10.1126/science.abi4355, 2021.

86. Gerlein-Safdi C, Bloom AA, Plant G, Kort EA, Ruf CS, *Improving Representation of Tropical Wetland Methane Emissions with CYGNSS Inundation Maps*, Global Biogeochemical Cycles, 35, e2020GB006890, https://doi.org/10.1029/2020GB006890, 2021.

85. Laughner JL, Neu JL, Schimel D, Wennberg PO, Barsanti K, Bowman KW, Chatterjee A, Croes BE, Fitzmaurice HL, Henze DK, Kim J, Kort EA, Liu Z, Miyazaki K, Turner AJ, Anenberg S, Avise J, Cao H, Crisp D, de Gouw J, Eldering A, Fyfe JC, Goldberg DL, Gurney KR, Hasheminassab S, Hopkins F, Ivey CE, Jones DBA, Lovenduski NS, Martin RV, McKinley GA, Ott L, Poulter B, Ru M, Sander SP, Swart N, Yung YL, Zeng ZC, KISS team, *Societal shifts due to COVID-19 reveal large-scale complexities and feedbacks between atmospheric chemistry and climate change*, Proceedings of the National Academy of Sciences, 118, 46, https://doi.org/10.1073/pnas.2109481118, 2021.

84. Hintsa EJ, Moore FL, Hurst DF, Dutton GS, Hall BD, Nance JD, Miller BR, Montzka SA, Wolton LP, McClure-Begley A, Elkins JW, Hall EG, Jordan AF, Rollins AW, Thornberry TD, Watts LA, Thompson CR, Peischl J, Bourgeois I, Ryerson TB, Daube BC, Pittman JV, Wofsy SC, Kort EA, Diskin GS, Bui TP, *UAS Chromatograph for Atmospheric Trace Species (UCATS) – a versatile instrument for trace gas measurements on airborne platforms*, Atmos. Meas. Tech., 14, 6795-6819, https://doi.org/10.5194/amt-14-6795-2021, 2021.

83. Gonzalez A, Millet DB, Yu X, Wells KC, Griffis TJ, Baier BC, Campbell PC, Choi Y, DiGangi JP, Gvakharia A, Halliday H, Kort EA, McKain K, Nowak J, Plant G, *Fossil Versus Nonfossil CO Sources in the US: New Airborne Constraints from ACT-America and GEM*, Geophysical Research Letters, https://doi.org/10.1029/2021GL093361, 2021.

82. Lyon DR, Hmiel B, Gautam R, Omara M, Roberts K, Barkley Z, Davis KJ, Miles N, Monteiro V, Richardson S, Conley S, Smith M, Jacob DJ, Shen L, Varon DJ, Deng A, Rudelis X, Sharma N, Story K, Brandt A, Kang M, Kort EA, Marchese A, Hamburg SP, *Concurrent variation in oil and gas methane emissions and oil price during the COVID-19 pandemic*, Atmos. Chem. Phys., https://doi.org/10.5194/acp-21-6605-2021, 2021.

81. Wu D, Lin JC, Duarte HF, Yadav V, Parazoo NC, Oda T, Kort EA, *A model for urban biogenic CO2 Fluxes: Solar-Induced Fluorescence for Modeling Urban biogenic Fluxes (SMUrF v1)*, Geosci. Model Dev., https://doi.org/10.5194/gmd-14-3633-2021, 2021.

80. Zavala-Araiza D, Omara M, Gautam R, Smith ML, Pandey S, Aben I, Almanza-Veloz V, Conley S, Houweling S, Kort EA, Maasakkers JD, Molina LT, Pusuluri A, Scarpelli T, Schwietzke S, Shen L, Zavala M, Hamburg SP, *A tale of two regions: methane emissions from oil and gas production in offshore/onshore Mexico*, Environ. Res. Lett. 16 024019, https://doi.org/10.1088/1748-9326/abceeb, 2021.

79. Yu X, Millet DB, Wells KC, Henze DK, Cao H, Griffis TJ, Kort EA, Plant G, Deventer MJ, Kolka RK, Roman DT, Davis KJ, Desai A, Baier BC, McKain K, Czarnetzki AC, Bloom AA, *Aircraft-based inversions quantify the importance of wetlands and livestock for Upper Midwest methane emissions*, Atmos. Chem. Phys., https://doi.org/10.5194/acp-21-951-2021, 2021.

78. Huber DE, Steiner AL, Kort EA, *Daily Cropland Soil NO_x Emissions Identified by TROPOMI and SMAP,* Geophysical Research Letters, doi: 10.1029/2020GL089949, 2020.

77. Gvakharia A, Kort EA, Smith ML, Conley S, *Evaluating Cropland N2O Emissions and Fertilizer Plant Greenhouse Gas Emissions With Airborne Observations,* J. Geophys. Res. Atmospheres, doi: 10.1029/2020JD032815, 2020.

76. Gorchov Negron AM, Kort EA, Conley SA, Smith ML, *Airborne Assessment of Methane Emissions from Offshore Platforms in the U.S. Gulf of Mexico*, Environ. Sci. Technol., doi: 10.1021/acs.est.0c00179, 2020.

75. Yang EG, Kort EA, Wu D, Lin JC, Oda T, Ye X, Lauvaux T, *Using space-based observations and Lagrangian modeling to evaluate urban carbon dioxide emissions in the Middle East*, J. Geophys. Res. Atmospheres, doi: 10.1029/2019JD031922, 2020.

74. Ye X, Lauvaux T, Kort EA, Oda T, Feng S, Lin JC, Yang EG, Wu D, *Constraining fossil fuel CO_2 emissions from urban area using OCO-2 observations of total column CO_2*, J. Geophys. Res. Atmospheres, doi: 10.1029/2019JD030528, 2020.

73. Wu D, Lin JC, Oda T, Kort EA, *Space-based quantification of per capita CO2 emissions from cities*, Environ. Res. Lett. 15 035004, https://doi.org/10.1088/1748-9326/ab68eb, 2020.

72. Yu X, Millet DB, Wells KC, Griffis TJ, Chen X, Baker JM, Conley SA, Smith ML, Gvakharia A, Kort EA, Plant G, Wood JD, *Top-down constraints on methane point source emissions from animal agriculture and waste based on new airborne measurements in the US Upper Midwest*, J. Geophys. Res. Biogeosciences, doi: 10.1029/2019JG005429, 2020.

71. Morgan EJ, Stephens BB, Long MC, Keeling RF, Bent JD, McKain K, Sweeney C, Hoecker-Martinez MS, Kort EA, *Summertime Atmospheric Boundary Layer Gradients of O2 and CO2 over the Southern Ocean*, J. Geophys. Res. Atmospheres, 124, doi: 10.1029/2019JD031479, 2019.

70. Huang Y, Kort EA, Karion A, Ware J, Mueller K, Gourdji S, *Seasonally resolved excess urban methane emissions from the Baltimore/Washington, DC metropolitan region*, Environ. Sci. Technol., doi: 10.1021/acs.est.9b02782, 2019.

69. Asher E, Hornbrook RS, Stephens BB, Kinnison D, Morgan E, Keeling R, Atlas E, Schauffler S, Tilmes S, Kort EA, Hoecker-Martinez M, Long M, Lamarque JF, Saiz-Lopez A, McKain K, Sweeney C, Hills AJ, Apel EC, *Novel approaches to improve estimates of short-lived halocarbon emissions during summer from the Southern Ocean using airborne observations,* Atmos. Chem. Phys., 19, 14071–14090, https://doi.org/10.5194/acp-19-14071-2019, 2019.

68. Cui YY, Vijayan A, Falk M, Hsu YK, Yin D, Chen XM, Zhao Z, Avise J, Chen Y, Verhulst K, Duren R, Yadav V, Miller C, Weiss R, Keeling R, Kim J, Iriaci LT, Tanaka T, Johnson MS, Kort EA, Bianco L, Fischer ML, Stroud K, Herner J, Croes B, *A multi-platform inversion estimation of statewide and regional methane emissions in California during 2014-2016*, Environ. Sci. Technol., doi: 10.1021/acs.est.9b01769, 2019.

67. Plant G, Kort EA, Floerchinger C, Gvakharia A, Vimont I, Sweeney C, *Large fugitive methane emissions from urban centers along the US East Coast*, Geophysical Research Letters, doi:10.1029/2019GL082635, 2019.

66. Ware J, Kort EA, Duren R, Verhulst K, Yadav V, *Detecting Urban Emissions Changes and Events with a Near Real Time Capable Inversion System*, J. Geophys. Res. Atmospheres, 124, 5117-5130. doi:10.1029/2018JD029224, 2019.

65. Turner A*, Frankenberg C*, Kort EA*, *Interpreting contemporary trends in atmospheric methane*, PNAS Perspective, 201814297, doi:10.1073/pnas.1814297116, 2019. *authors contributed equally.

64. Gaubert B, Stephens BB, Basu S, Chevallier F, Deng F, Kort EA, Patra PK, Peters W, Rodenbeck C, Saeki T, Schimel D, Van der Laan-luijkx I, Wofsy S, Yin Y, *Global atmospheric CO_2 inverse models converging on neutral tropical land exchange but diverging on fossil fuel and atmospheric growth rate*, Biogeosciences, 16, 117-134, https://doi.org/10.5194/bg-16-117-2019, 2019.

63. Gvakharia A, Kort EA, Smith M, Conley S, *Testing and evaluation of a new airborne system for continuous N_2O, CO_2, CO, and H_2O measurements: the Frequent Calibration High-performance Airborne Observation System (FCHAOS)*, Atmos. Meas. Tech. 11, 6059-6074, https://doi.org/10.5194/amt-11-6059-2018, 2018.

62. Wu D, Lin JC, Oda T, Ye X, Lauvaux T, Yang EG, Kort EA, *A Lagrangian Approach Towards Extracting Signals of Urban CO_2 Emissions from Satellite Observations of Atmospheric Column CO_2 (XCO_2): X-Stochastic Time-Inverted Lagrangian Transport model ("X-STILT v1.1")*, Geosci. Model Dev., 11, 4843-4871, https://doi.org/10.5194/gmd-11-4843-2018, 2018.

61. Zeng ZC, Natraj V, Xu F, Pongetti TJ, Shia RL, Kort EA, Toon GC, Sander SP, Yung YL, *Constraining Aerosol Vertical Profile in the Boundary Layer Using Hyperspectral Measurements of Oxygen Absorption*, Geophysical Research Letters, 45, 10,772–10,780. https://doi.org/10.1029/2018GL079286, 2018.

60. Alvarez RA, Zavala-Araiza D, Lyon DR, Allen DT, Barkley ZR, Brandt AR, Davis KJ, Herndon SC, Jacob DJ, Karion A, Kort EA, Lamb BK, Lauvaux T, Maasakkers JD, Marchese AJ, Omara M, Pacala SW, Peischl J, Robinson AL, Shepson PB, Sweeney C, Townsend-Small A, Wofsy SC, Hamburg SP, *Assessment of Methane Emissions from the U.S. Oil and Gas Supply Chain*, Science, 10.1126/science.aar7204, 2018.

59. Gourdji SM, Yadav V, Karion A, Mueller KL, Conley S, Ryerson T, Nehrkorn T, Kort EA, *The Aliso Canyon natural gas leak as a natural tracer experiment: reducing errors in aircraft atmospheric inversion estimates of point-source emissions*, Environmental Research Letters, 13, 045003, 2018.

58. Stephens BB, Long MC, Keeling RF, Kort EA, Sweeney C, Apel EC, Atlas EL, Beaton S, Bent JD, Blake NJ, Bresch JF, Casey J, Daube BC, Diao M, Diaz E, Dierssen H, Donets V, Gao BC, Gierach M, Green R, Haag J, Hayman M, Hills AJ, Hoecker-Martinez MS, Honomichl SB, Hornbrook RS, Jensen JB, Li RR, McCubbin I, McKain K, Morgan EJ, Nolte S, Powers JG, Rainwater B, Randolph K, Reeves M, Schauffler SM, Smith M, Smith K, Stith J, Stossmeister G, Toohey DW, Watt AS, *The O2/N2 Ratio and CO2 Airborne Southern Ocean (ORCAS) Study*, Bull. Amer. Meteor. Soc. doi:10.1175/BAMS-D-16-0206.1, 2018.

57. Barkley ZR, Lauvaux T, Davis KJ, Deng A, Miles NL, Richardson SJ, Cao Y, Sweeney C, Karion A, Smith M, Kort EA, Schwietzke S, Murphy T, Cervone G, Martins D, Maasakkers JD, *Quantifying methane emissions from natural gas production in northeastern Pennsylvania*, Atmos. Chem. Phys., 17, 13941-13966, https://doi.org/10.5194/acp-17-13941-2017, 2017.

56. Conley S, Faloona I, Mehrotra S, Suard M, Lenschow DH, Sweeney C, Herndon S, Schwietzke S, Petron G, Pifer J, Kort EA, Schnell R, *Application of Gauss' Theorem to quantify localized*

surface emissions from airborne measurements of wind and trace gases, Atmos. Meas. Tech., 10, 3345-3358, https://doi.org/10.5194/amt-10-3345-2017, 2017.

55. Thorpe AK, Frankenberg C, Thompson DR, Duren RM, Aubrey AD, Bue BB, Green RO, Gerilowski K, Krings T, Borchard J, Kort EA, Sweeney C, Conley S, Roberts DA, Dennison PE, *Airborne DOAS retrievals of methane, carbon dioxide, and water vapor concentrations at high spatial resolution: application to AVIRIS-NG*, Atmos. Meas. Tech., 10, 3833-3850, https://doi.org/10.5194/amt-10-3833-2017, 2017.

54. Smith ML, Gvakharia A, Kort EA, Sweeney C, Conley S, Faloona I, Newberger T, Schnell R, Schwietzke S, Wolter S, *Airborne quantification of methane emissions over the Four Corners region*, Environ. Sci. Technol., doi: 10.1021/acs.est.6b06107, 2017.

53. Gvakharia A, Kort EA, Brandt AR, Peischl J, Ryerson TB, Schwarz JP, Smith ML, Sweeney C, *Methane, black carbon, and ethane emissions from natural gas flares in the Bakken Shale, ND*, Environ. Sci. Technol., doi: 10.1021/acs.est.6b05183, 2017.

52. Cui YY, Brioude J, Angevine WM, Peischl J, McKeen SA, Kim SW, Neuman JA, Henze D, Bousserez N, Fischer ML, Jeong S, Michelsen HA, Bambha RP, Liu Z, Santoni GW, Daube BC, Kort EA, Frost GF, Ryerson TB, Wofsy SC, Trainer M, *Top-down estimate of methane emissions in California using a mesoscale inverse modeling technique: The San Joaquin Valley*, J. Geophys. Res. Atmos., 122, doi:10.1002/2016JD026398, 2017.

51. Frankenberg C, Thorpe A, Thompson DR, Hulley G, Kort EA, Vance N, Borchardt J, Krings T, Gerilowski K, Sweeney C, Conley S, Bue B, Aubrey A, Hook S, Green R, *Airborne methane remote measurements reveal heavy-tail flux distribution in Four Corners region*, Proceedings of the National Academy of Sciences, doi: 10.1073/pnas.1605617113, 2016.

50. Ware J, Kort EA, DeCola P, Duren R, *Aerosol Lidar Observations of Atmospheric Mixing in Los Angeles: Climatology and Implications for Greenhouse Gas Observations*, J. Geophys. Res., doi: 10.1002/2016JD024953, 2016.

49. Inoue M, Morino I, Uchino O, Nakatsuru T, Yoshida Y, Yokota T, Wunch D, Wennberg PO, Roehl CM, Griffith DWT, Velazco VA, Deutscher NM, Warneke T, Notholt J, Robinson J, Sherlock V, Hase F, Blumenstock T, Rettinger M, Sussmann R, Kyrö E, Kivi R, Shiomi K, Kawakami S, De Mazière M, Arnold SG, Feist DG, Barrow EA, Barney J, Dubey M, Schneider M, Iraci L, Podolske JR, Hillyard P, Machida T, Sawa Y, Tsuboi K, Matsueda H, Sweeney C, Tans PP, Andrews AE, Biraud SC, Fukuyama Y, Pittman JV, Kort EA, and Tanaka T, *Bias corrections of GOSAT SWIR XCO_2 and XCH_4 with TCCON data and their evaluation using aircraft measurement data*, Atmos. Meas. Tech., 9, 3491-3512, doi:10.5194/amt-9-3491-2016, 2016.

48. Kort EA, Smith ML, Murray LT, Gvakharia A, Brandt A, Peischl J, Ryerson TB, Sweeney C, Travis K, *Fugitive emissions from the Bakken shale illustrate role of shale production in global ethane shift*, Geophysical Research Letters, 43, doi:10.1002/2016GL068703, 2016.

47. Peischl J, Karion A, Sweeney C, Kort EA, Smith ML, Brandt AR, Yeskoo T, Aikin KC, Conley SA, Gvakharia A, Trainer M, Wolter S, Ryerson TB, *Quantifying atmospheric methane emissions from oil and natural gas production in the Bakken shale region of North Dakota*, J. Geophys. Res., doi: 10.1002/2015JD024631, 2016.

46. Frankenberg C, Kulawik SS, Wofsy S, Chevallier F, Daube B, Kort EA, O'Dell C, Olsen ET, Osterman G, *Using airborne HIAPER Pole-to-Pole Observations (HIPPO) to evaluate model and remote sensing estimates of atmospheric carbon dioxide*, Atmos. Chem. Phys., 16, 7867-7878, doi:10.5194/acp-16-7867-2016, 2016.

45. Hopkins FM, Kort EA, Bush SE, Ehleringer JR, Lai CT, Blake DR, Randerson JT, *Spatial patterns and source attribution of urban methane in the Los Angeles Basin*, J. Geophys. Res., 121, doi: 10.1002/2015JD024429, 2016.

44. Patra PK, Saeki T, Dlugokencky EJ, Ishijima K, Umezawa T, Ito A, Aoki S, Morimoto S, Kort EA, Crotwell A, Ravi Kumar K, Nakazawa T, *Regional methane emission estimation based on observed atmospheric concentrations (2002-2012),* Journal of the Meterological Society of Japan, 2016, 94 (1), pp. 91-113, doi: 10.2151/jmsj.2016-006, 2016.

43. Zavala-Araiza D, Lyon DR, Alvarez RA, Davis KJ, Harriss R, Herndon SC, Karion A, Kort EA, Lamb BK, Lan X, Marchese AJ, Pacala SW, Robinson AL, Shepson PB, Sweeney C, Talbot R, Townsend-Small A, Yacovitch TI, Zimmerle D, Hamburg SP, *Reconciling divergent estimates of oil and gas methane emissions*, Proceedings of the National Academy of Sciences, doi:10.1073/pnas.1522126112, 2015.

42. Schwarz JP, Holloway JS, Katich JM, McKeen S, Kort EA, Smith ML, Ryerson TB, Sweeney C, Peischl J, *Black Carbon Emissions from the Bakken Oil and Gas Development Region*, Eviron. Sci. Technol. Lett., doi: 10.1021/acs.estlett.5b00225, 2015.

41. Smith ML, Kort EA, Karion A, Sweeney C, Herndon SC, Yacovitch TI, *Airborne ethane observations in the Barnett Shale: Quantification of ethane flux and attribution of methane emissions*, Environ. Sci. Technol., doi: 10.1021/acs.est.5b00219, 2015.

40. Karion A, Sweeney, C, Kort EA, Shepson PB, Brewer A, Cambaliza M, Conley S, Davis K, Deng A, Hardesty M, Herndon SC, Lauvaux T, Lavoie T, Lyon D, Newberger T, Petron G, Rella C, Smith M, Wolter S, Yacovitch TI, Tans P, *Aircraft-based estimate of total methane emissions from the Barnett Shale region*, Environ. Sci. Technol., doi: 10.1021/acs.est.5b00217, 2015.

39. Wells KC, Millet DB, Bousserez N, Henze DK, Chaliyakunnel S, Griffis TJ, Luan Y, Dlugokencky EJ, Prinn RG, O'Doherty S, Weiss RF, Dutton GS, Elkins JW, Krummel PB, Langenfelds R, Steele LP, Kort EA, Wofsy SC, Umezawa T, *Simulations of atmospheric N2O with GEOS-Chem and its adjoint: evaluation of observational constraints*, Geosci. Model Dev., 8, 3179-3198, doi: 10.5194/gmd-8-3179-2015, 2015.

38. Deng F, Jones DBA, Walker TW, Keller M, Bowman KW, Henze DK, Nassar R, Kort EA, Wofsy SC, Walker KA, Bourassa AE, Degenstein DA, *Sensitivity analysis of the potential impact of discrepancies in stratosphere-troposphere exchange on inferred sources and sinks of CO_2*, Atmos. Chem. Phys., 15, 11773-11788, doi: 10.5194/acp-15-11773-2015, 2015.

37. Cui YY, Brioude J, McKeen SA, Angevine WM, Kim SW, Frost GJ, Ahmadov R, Peischl J, Bousserez N, Liu Z, Ryerson TB, Wofsy SC, Santoni GW, Kort EA, Fischer ML, Trainer M, *Top-down estimates of methane emissions in California using a mesoscale inverse modeling technique: 1. The South Coast Air Basin*, J. Geophys. Res., 120, doi: 10.1002/2014JD023002, 2015.

36. Wong KW, Fu D, Pongetti TJ, Newman S, Kort EA, Duren R, Hsu Y-K, Miller CE, Yung YL, Sander SP, *Mapping CH_4 : CO_2 ratios in Los Angeles with CLARS-FTS from Mount Wilson, California*, Atmos. Chem. Phys., 15, 241-252, doi:10.5194/acp-15-241-2015, 2015.

35. Alexe, M, Bergamaschi P, Segers A, Detmers R, Butz A, Hasekamp O, Guerlet S, Parker R, Boesch H, Frankenberg C, Scheepmaker RA, Dlugokencky E, Sweeney C, Wofsy SC, Kort EA, *Inverse modeling of CH_4 emissions for 2010-2011 using different satellite retrieval products from GOSAT and SCIAMACHY*, Atmos. Chem. Phys., 15, 113-133, doi:10.5194/acp-15-113-2015, 2015.

34. Gray JM, Frolking S, Kort EA, Ray DK, Kucharik CJ, Ramankutty N, Friedl MA, *Direct human influence on atmospheric CO_2 seasonality from increased cropland productivity*, Nature, 515 (7527), 398-401, doi:10.1038/nature13957, 2014.

33. Kort EA, Frankenberg C, Costigan KR, Lindemaier R, Dubey MK, Wunch D, *Four Corners: the largest US methane anomaly viewed from space,* Geophysical Research Letters, 41 (19), 6898-6903, doi:10.1002/2014GL061503, 2014.

32. Inoue M, Morino I, Uchino O, Miyamoto Y, Saeki T, Yoshida Y, Yokota T, Sweeney C, Tans PP, Biraud SC, Machida T, Pittman JV, Kort EA, Tanaka T, Kawakami S, Sawa Y, Tsuboi K, Matsueda H, *Validation of XCH_4 derived from SWIR spectra of GOSAT TANSO-FTS with aircraft measurement data*, Atmos. Meas. Tech., 7, 2987-3005, doi:10.5194/amt-7-2987-2014, 2014.

31. Hutyra LR, R Duren, KR Gurney, N Grimm, EA Kort, E Larson, G Shrestha, *Urbanization and the carbon cycle: Current capabilities and research outlook from the natural sciences perspective*, Earth's Future, doi: 10.1002/2014EF000255, 2014.

30. Yacovitch TI, Herndon SC, Roscioli JR, Floerchinger C, McGovern RM, Agnese M, Petron G, Kofler J, Sweeney C, Karion A, Conley SA, Kort EA, Nahle L, Fischer M, Hildebrandt L, Koeth J, McManus BJ, Nelson DD, Zahniser M, Kolb CE, *Demonstration of an Ethane Spectrometer for Methane Source Identification*, Environ. Sci. Tech., 48 (14), pp 8028-8034, doi: 10.1021/es501475q, 2014.

29. Brandt AR, Heath GA, Kort EA, O'Sullivan F, Petron G, Jordaan SM, Tans P, Wilcox J, Gopstein AM, Arent D, Wofsy S, Brown NJ, Bradley R, Stucky GD, Eardley D, Harriss R, *Methane Leaks from North American Natural Gas Systems*, Science, *343*(6172), 733-735, 2014.

28. Miller SM, Worthy DEJ, Michalak AM, Wofsy SC, Kort EA, Havice TC, Andrews AE, Dlugokencky EJ, Kaplan JO, Levi PJ, Tian H, Zhang B, *Observational constraints on the distribution, seasonality, and environmental predictors of North American boreal methane emissions*, Global Biogeochemical Cycles, doi: 10.1002/2013GB004580, 2014.

27. Houweling S, Krol M, Bergamaschi P, Frankenberg C, Dlugokencky EJ, Morino I, Notholt J, Sherlock V, Wunch D, Beck V, Gerbig C, Chen H, Kort EA, Rockmann T, Aben I, *A multi-year methane inversion using SCIAMACHY, accounting for systematic errors using TCCON measurements*, Atmos. Chem. Phys., 14, 3991-4012, doi:10.5194/acp-14-3991-2014, 2014.

26. Deng F, Jones DBA, Henze DK, Bousserez N, Bowman KW, Fisher JB, Nassar R, O'Dell C, Wunch D, Wennberg PO, Kort EA, Wofsy SC, Blumenstock T, Deutscher NM, Griffith D, Hase F, Heikkinen P, Sherlock V, Strong K, Sussmann R, Warneke T, *Inferring regional sources and sinks of atmospheric CO_2 from GOSAT XCO_2 data*, Atmos. Chem. Phys., 14, 3703-3727, doi:10.5194/acp-14-3703-2014, 2014.

25. Santoni GW, Daube BC, Kort EA, Jimenez R, Park S, Pittman JV, Gottlieb E, Xiang B, Zahniser MS, Nelson DD, McManus JB, Peischl J, Ryerson TB, Holloway JS, Andrews AE, Sweeney C, Hall BD, Hintsa EJ, Moore FL, Elkins JW, Stephens BB, Wofsy SC, *Evaluation of the Airborne Quantum Cascade Laser Spectrometer (QCLS) measurements of the carbon and greenhouse gas suite– CO_2, CH_4, N_2O, and CO – during the CalNex and HIPPO campaigns*, Atmos. Meas. Tech., 7, 1509-1526, doi:10.5194/amt-7-1509-2014, 2014.

24. Miller SM, Wofsy SC, Michalak AM, Kort EA, Andrews AE, Biraud S, Dlugokencky E, Eluszkiewicz J, Fischer ML, Janssens-Maenhout G, Miller BR, Miller, JB, Montzka S, Nehrkorn T, and Sweeney C, *Anthropogenic emissions of methane in the United States*, Proceedings of the National Academy of Sciences, doi:10.1073/pnas.1314392110, 2013.

23. Worden J, Jiang Z, Jones DBA, Alvarado M, Bowman K, Frankenberg C, Kort EA, Kulawik SS, Lee M, Liu J, Payne V, Wecht K, and Worden H, *El Nino, the 2006 Indonesian peat fires, and the distribution of atmospheric methane*, Geophysical Research Letters, 40, doi:10.1002/grl.50937, 2013.

22. Graven HD, Keeling RF, Piper SC, Patra PK, Stephens BB, Wofsy SC, Welp LR, Sweeney C, Tans PP, Kelley JJ, Daube BC, Kort EA, Santoni GW, and Bent JD, *Enhanced seasonal exchange of CO_2 by northern ecosystems since 1960*, Science, DOI: 10.1126/science.1239207, 2013.

21. Bergamaschi P, Houweling S, Segers A, Krol M, Frankenberg C, Scheepmaker RA, Dlugokencky E, Wofsy SC, Kort EA, Sweeney C, Schuck T, Brenninkmeijer C, Chen H, Beck V, and Gerbig C, *Atmospheric CH_4 in the first decade of the 21st century: Inverse modeling analysis using SCIAMACHY satellite retrievals and NOAA surface measurements*, J. Geophys. Res., doi: 10.1002/jgrd.50480, 2013.

20. Kort EA, Angevine W, Duren R, Miller CE, *Surface observations for monitoring urban fossil fuel CO_2 emissions: minimum site location requirements for the Los Angeles megacity*, J. Geophys. Res., 118(3), 1577-1584, doi: 10.1002/jgrd.50135, 2013.

19. Kulawik SS, Worden JR, Wofsy SC, Biraud SC, Nassar R, Jones DBA, Olsen ET, Jimenez R, Park S, Santoni GW, Daube BC, Pittman JV, Stephens BB, Kort EA, Osterman GB, and the TES team, *Comparison of improved Aura Tropospheric Emission Spectrometer (TES) CO_2 with HIPPO and SGP aircraft profile measurements*, Atmos. Chem. Phys., 13, 3205-3225, doi:10.5194/acp-13-3205-2013, 2013.

18. Xiang B, Miller SM, Kort EA, Santoni GW, Daube BC, Commane R, Pittman JV, Angevine W, Ryerson T, Trainer M, Andrews AE, Nehrkorn T, and Wofsy SC, *Nitrous Oxide (N_2O) Emissions from California based on 2010 CalNex Airborne Measurements*, J. Geophys. Res., 118(7), 2809-2820, doi: 10.1002/jgrd.50189, 2013.

17. Worden J, Wecht K, Frankenberg C, Alvarado M, Bowman K, Kort E, Kulawik S, Lee M, Payne V, Worden H, *CH_4 and CO distributions over tropical fires as observed by the Aura TES satellite instrument and modeled by GEOS-Chem*, Atmos. Chem. Phys., 13, 3679-3692, doi:10.5194/acp-13-3679-2013, 2013.

16. Newman S, Jeong S, Fischer ML, Xu X, Haman CL, Lefer B, Alvarez S, Rappenglueck B, Kort EA, Andrews AE, Peischl J, Gurney KR, Miller CE, and Yung YL, *Diurnal tracking of anthropogenic CO_2 emissions in the Los Angeles basin mega-city during spring, 2010*, Atmos. Chem. Phys., 13, 4359-4372,doi:10.5194/acp-13-4359-2013, 2013.

15. Tian H, Lu C, Guangsheng C, Tao B, Pan S, Del Grosso SJ, Xu X, Bruhwiler L, Wofsy SC, Kort EA, and Prior SA, *Contemporary and projected terrestrial methane and nitrous oxide budgets in North America*, National Climate Assessment Biogeochemistry Special Issue, Frontiers in Ecology and the Environment, 10(10), 528-536, doi:10.1890/120057, 2012.

14. Kort EA, Frankenberg C, Miller CE, and Oda T, *Space-based Observations of Megacity Carbon Dioxide*, Geophysical Research Letters, Vol. 39, L17806, doi: 10.1029/2012GL052738, 2012.

13. Wennberg PO, Mui W, Wunch D, Kort EA, Blake DR, Atlas EL, Santoni GW, Wofsy SC, Diskin GS, Jeong S, and Fischer ML, *On the Sources of Methane to the Los Angeles Atmosphere*, Environmental Science and Technology, 46 (17), pp 9282-9289, doi: 10.1021/es301138y, 2012.

12. Kort EA, Wofsy SC, Daube BC, Diao M, Elkins JW, Gao RS, Hintsa EJ, Hurst DF, Jimenez R, Moore FL, Spackman JR, and Zondlo MA, *Atmospheric observations of high latitude Arctic Ocean methane emissions up to 82°north*, Nature Geoscience, 5, 318-321, doi:10.1038/ngeo1452, 2012.

11. Miller SM, Kort EA, Hirsch AI, Dlugokencky EJ, Andrews AE, Xu X, Tian H, Nehrkorn T, Eluszkiewicz J, Michalak AM, and Wofsy SC, *Regional sources of nitrous oxide over the United States: seasonal variation and spatial distribution*, J. Geophys. Res., 117, D06310, doi:10.1029/2011JD016951, 2012.

10. Pollack IB, Ryerson TB, Trainer M, Parrish DD, Andrews AE, Atlas EL, Blake DR, Brown SS, Commane R, Daube BC, de Gouw JA, Dube WP, Flynn J, Frost GJ, Gilman JB, Grossberg N, Holloway JS, Kofler J, Kort EA, Kuster WC, Lang PM, Lefer B, Lueb RA, Neuman JA, Nowak JB, Novelli PC, Peischl J, Perring AE, Roberts JM, Santoni G, Schwarz JP, Spackman JR, Wagner NL, Warneke C, Wofsy SC, and Xiang B, *Airborne and ground-based observations of a weekend effect in ozone, precursors, and oxidation products in the California South Coast Air Basin*, J. Geophys. Res., 117, D00V05, doi:10.1029/2011JD016772, 2012.

9. Wecht KJ, Jacob DJ, Wofsy SC, Kort EA, Worden JR, Kulawik SS, Henze DK, Kopacz M, and Payne VH, *Validation of TES methane with HIPPO aircraft observations: implications for inverse modeling of methane sources*, Atmos. Chem. Phys., 12, 182301832, 2012.

8. Kort EA, Patra PK, Ishijima K, Daube BC, Jiménez R, Elkins J, Hurst D, Moore FL, Sweeney C, and Wofsy SC, *Tropospheric distribution and variability of N_2O: Evidence for strong tropical emissions*, Geophysical Research Letters, Vol. 38, L15806, doi:10.1029/2011GL047612, 2011.

7. Wofsy SC, & HIPPO team, *HIAPER Pole-to-Pole Observations (HIPPO): Fine grained, global scale measurements for determining rates for transport, surface emissions, and removal of climatically important atmospheric gases and aerosols*, Phil. Trans. of the Royal Society A, 369(1943), 2073-2086, 2011.

6. Pickett-Heaps CA, Jacob DJ, Wecht KJ, Kort EA, Wofsy SC, Diskin GS, Worthy DEJ, Kaplan JO, Bey I, and Drevet J: *Magnitude and seasonality of wetland methane emissions from the Hudson Bay Lowlands (Canada)*, Atmos. Chem. Phys., 11, 3773-3779, doi:10.5194/acp-11-3773-2011, 2011.

5. Wunch D, Toon GC, Wennberg PO, Wofsy SC, Stephens BB, Fischer ML, Uchino O, Abshire JB, Bernath P, Biraud SC, Blavier JFL, Boone C, Bowman KP, Browell EV, Campos T, Connor BJ, Daube BC, Deutscher NM, Diao M, Elkins JW, Gerbig C, Gottlieb E, Griffith DWT, Hurst DF, Jimenez R, Keppel-Aleks, Kort EA, Macatangay R, Machida T, Matsueda H, Moore F, Morino I, Park S, Robinson J, Roehl CM, Sawa Y, Sherlock V, Sweeney C, Tanaka T, Zondlo MA, *Calibration of the Total Carbon Column Observing Network using aircraft profile data*, Atmos. Meas. Tech., 3, 1351-1362 doi: 10.5194/amt-3-1351-2010, 2010.

4. Kort EA, Andrews AE, Dlugokencky EJ, Sweeney C, Hirsch, A, Eluszkiewicz J, Nehrkorn T, Michalak AM, Stephens BB, Gerbig C, Miller JB, Kaplan J, Houweling S, Daube BC, Tans PP, Wofsy SC, *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, 125-133, doi:10.1080/19438151003767483, 2010.

3. Zahniser MS, Nelson DD, McManus JB, Herndon S, Wood E, Shorter JH, Lee BW, Santoni GH, Jimenez R, Daube BC, Park S, Kort EA, Wofsy SC, *Infrared QC laser applications to field measurements of atmospheric trace gas sources and sinks in environmental research: enhanced capabilities using continuous wave QCLs*, SPIE, Vol. 7222, doi:10.1117/12.815172, 2009.

2. Kort EA, Eluszkiewicz J, Stephens BB, Miller JB, Gerbig C, Nehrkorn T, Daube BC, Kaplan JO, Houweling S, Wofsy SC, *Emissions of CH_4 and N_2O over the United States and Canada based on a receptor-oriented modeling framework and COBRA-NA atmospheric observations*, Geophysical Research Letters, Vol. 35, L18808, doi:10.1029/2008GL034031, 2008.

1. Cubukcu E, Kort EA, Crozier KB, Capasso F, *Plasmonic laser antenna*, Applied Physics Letters, 89, 093120, 2006.

Conference Abstracts (*invited)

Ort L, Frankenberg C, Dadheech N, Yoon J, Turner AJ, Bloom AA, Konopka P, Lachnitt HC, Hoor P, Lelieveld J, Kort EA, Fischer H, Regional Methane Emissions: A comparison of different emission inventories and flux estimate techniques in strong emitting regions, IGAC, Greece, 2026.

Andersen ST, Wüst L, Türk GNTE, Dewald P, Nelson C, Schuladen J, Ehn M, Petäjä T, Rannik Ü, Ylivinkka I, Ahonen LR, Fischer H, Lelieveld J, Kort EA, Crowley JN, Nocturnal vertical gradients in O3, NO and NO2 in a boreal forest: The role of chemical reactions, deposition and entrainment, IGAC, Greece, 2026.

Türk GNTE, Andersen ST, Dewald P, Schuladen J, Lelieveld J, Kort EA, Crowley J, The elusive Nitrate Radical: Challenges of direct measurements of NO3 & N2O5 in forest environments, IGAC, Greece, 2026.

*Kort EA, *Space-based and airborne approaches to quantify cropland nitrogen emissions and assess atmospheric impacts*, AGU 2025, New Orleans, 2025.

*Kort EA, Whiting E, Plant G, *Using Satellites and Aircraft to Monitor Greenhouse Gas and Pollutant Emissions from Cities*, AGU 2025, New Orleans, 2025.

Gerlein-Safdi C, Pu T, Xiong Y, Stephens K, Scheliga A, Valcarcel A, Kort EA, Bloom AA, *GNSS-R for Surface Hydrology: Product Development and Applications*, AGU 2025, New Orleans, 2025.

Plant G, Kort EA, Vimont IJ, Sweeney C, *Elevated Urban HFC and HCFC Emissions from the New York City Region*, AGU 2025, New Orleans, 2025.

Whiting E, Plant G, Kort EA, *Resolving seasonal urban methane emissions with space-based observations from TROPOMI*, AGU 2025, New Orleans, 2025.

Reuland F, Adams T, Galvin K, Sherwin ED, Kort EA, Brandt A, *Large-Scale Controlled Methane Releases for Satellite Detection and Quantification of Point Sources*, AGU 2025, New Orleans, 2025.

Adams T, Galvin K, Reuland F, El Abbadi S, Le T, Brandt AR, Kort EA, *Single-Blind Evaluation of Emerging Continuous Methane Monitoring Systems Across 400+ Controlled Releases,* AGU 2025, New Orleans, 2025.

Duren R, Cusworth D, Ayasse A, Howell K, Scarpelli T, Kim J, Bon D, Diamond A, Keremedjiev M, Guido J, Teja Nallapu R, Thorpe AK, Jensen D, Reuland F, Brandt AR, Adams T, Kort EA, Green RO, *Cabon Mapper: greenhouse gas measurement performance and findings from Tanager-1*, AGU 2025, New Orleans, 2025.

Kort EA, Plant G, Dacic N, Adams T, *Using Aircraft and Satellites to Observe Highly Skewed and Temporally Dynamic N2O Emissions from Croplands*, AGU Fall Meeting, Washington DC, 2024.

Whiting E, Plant G, Biener KJ, Kort EA, *Can use use space-based observations to observe the impact of mitigation pledges on urban methane emissions?,* AGU Fall Meeting, Washington DC, 2024.

Xiong Y, Kort EA, Bloom AA, Gerlein-Safdi C, Pu T, *Atmospheric methane surge in 2020, 2021 cannot be explained by tropical inundation and precipitation*, AGU Fall Meeting, Washington DC, 2024.

Adams T, Kort EA, *Can We Use Space-Based NO2 Observations to Track Cropland N2O Emissions*, AGU Fall Meeting, Washington DC, 2024.

Riaz A, Buma B, Miller CE, Cady-Pereira KE, Sun K, Spurr RJD, Kort EA, *Linear sensitivity analysis of N2O remote sensing by integrating Near- and mid-infrared nitrous oxide bands*, AGU Fall Meeting, Washington DC, 2024.

Huber D, Kort EA, Goldberg DL, Steiner AL, *The Influence of Soil Nitrogen Oxide Emissions on Primary and Secondary Pollutant Formation*, AMS Annual Meeting, 2024.

Kort EA, Negron AMG, Plant G, Biener KJ, Chen Y, Brandt AR, Smith M, Zavala-Araiza D, Adames-Corraliza A, Schwietzke S, *Emissions of Greenhouse Gases and Pollutants from Natural Gas Flares and Offshore Oil and Gas Platforms: Results from the F^{3}UEL Project*, AGU Fall Meeting, San Francisco, 2023.

Xiong Y, Kort EA, Bloom AA, Gerlein-Safdi C, Pu T, *Interannual and Seasonal Variability of Methane Emissions from Tropical Wetlands Derived from Four Years of CYGNSS Observations*, AGU Fall Meeting, San Francisco, 2023.

Whiting E, Plant G, Kort EA, Aben I, Leguijt G, Maasakkers J, *Evaluating Methane Emissions of C40 Cities from Space*, AGU Fall Meeting, San Francisco, 2023.

Roten D, Wilmot T, Lin JC, Das S, Kort EA, Chatterjee A, *How Well do OCO-2 and OCO-3 Monitor the United States? Implications for Current and Future Space-based Carbon-observing Systems*, AGU Fall Meeting, San Francisco, 2023.

Plant G, Kort EA, Negron AMG, Fordice G, Brandt AR, Chen Y, Smith M, *NOx from US flares exhibits a skewed emissions distribution*, AGU Fall Meeting, San Francisco, 2023.

Huber DE, Steiner A, Kort EA, *Agricultural Soil NOx and its Contribution to Primary and Secondary Pollutant Formation*, AGU Fall Meeting, San Francisco, 2023.

Gerlein-Safdi C, Pu T, Xiong Y, Kort EA, Bloom AA, *Beneath the sea of clouds: a new CYGNSS-based monthly watermask product uncovers the hidden seasonality of tropical waterbodies*, AGU Fall Meeting, San Francisco, 2023.

Burton N, Kort EA, Pettersen C, *Marine Cloud Brightening from Offshore Oil and Gas Platform Emissions in the Southern Gulf of Mexico*, AGU Fall Meeting, San Francisco, 2023.

Biener KJ, Negron AG, Kort EA, Chen Y, Ayasse A, Brandt AR, MacLean JP, McKeever J, *Persistence and Temporal Variation of Methane Emissions from Shallow Water Oil and Gas Production in the Gulf of Mexico, from 2018 to 2022*, AGU Fall Meeting, San Francisco, 2023.

Moss Z, Kort EA, Stephens B, *Investigating the Cause of Unexpected CO2 signals Seen from Ship-Based Measurements in the Southern Ocean*, 103rd AMS Annual Meeting, 2023.

Gorchov Negron AM, Kort EA, Chen Y, Brandt AR, Smith M, Plant G, Ayasse A, Schwietzke S, Zavala-Araiza D, Hausman C, Adames-Corraliza A, *Observations show that methane emissions elevate the carbon intensity of oil and gas production in the US Gulf of Mexico*, AGU Fall Meeting, Chicago, 2022.

Huber DE, Steiner AL, Kort EA, *Evaluating the Impact of Soil Moisture on Agricultural Soil NOx Emissions and Air Quality*, AGU Fall Meeting, Chicago, 2022.

Whiting E, Plant G, Kort EA, *Estimating Urban Methane Emissions from Space using TROPOMI CH4:CO Enhancement Ratios*, AGU Fall Meeting, Chicago, 2022.

Li M, Kort EA, Bloom AA, Wu D, Plant G, Gerlein-Safdi C, Pu T, *Using Atmospheric Observations to Improve the Representation of Wetland Methane Emissions in the Pantanal,* AGU Fall Meeting, Chicago, 2022.

Wu D, Liu J, Wennberg P, Laughner J, Palmer PI, Nelson RR, Lin JC, Kort EA, Eldering A, *Informing intra-city emission characteristics using satellite observations of CO2 and co-emitted species,* AGU Fall Meeting, Chicago, 2022.

Wilmot T, Lin JC, Wu D, Roten D, Oda T, Kort EA, *Urban CO2 Emissions from Cities around the World and their Scaling Relationships with Socioeconomic Variables, determined with Orbiting Carbon Observatory -2*, AGU Fall Meeting, Chicago, 2022.

Roten D, Lin JC, Kort EA, *Detecting Changes in Sector-specific CO2 Emissions from Space: an Application of OCO-3 over the Los Angeles Basin*, AGU Fall Meeting, Chicago, 2022.

Ayasse A, Thorpe AK, Cusworth D, Kort EA, Gorchov Negron AM, Heckler J, Asner G, Duren R, *Methane Plume Mapping Over Shallow Water Offshore Oil and Natural Gas Platforms in the Gulf of Mexico*, AGU Fall Meeting, Chicago, 2022.

Pu T, Gerlein-Safdi C, Kort EA, Bloom AA, Li M, *Coupling CYGNSS and Digital Elevation Data for High Spatio-temporal Mapping of Inundation*, AGU Fall Meeting, Chicago, 2022.

Thorpe AK, Kort EA, Cusworth D, Ayasse A, Bue BD, Yadav V, Thompson DR, Frankenberg C, Herner J, Falk M, Green RO, Miller CE, Duren R, *Methane Emissions Decline From Reduced Oil, Natural Gas, and Refinery Production during COVID-19*, AGU Fall Meeting, Chicago, 2022.

Chen Y, Englander J, Gorchov Negron AM, Plant G, Fordice G, Schwietzke S, Zavala-Araiza D, Kort EA, Brandt AR, *Seven years of repeated mobile OGI surveys for tracking long-term trends in methane emissions from oil and gas facilities*, AGU Fall Meeting, Chicago, 2022.

Huber DE, Steiner A, Kort EA, *The influence of soil moisture on soil NOx emissions: sensitivity to inputs and a more robust model parameterization*, International Global Atmospheric Chemistry (IGAC), Manchester, UK, 2022.

*Kort EA, *Using aircraft and satellite observations to study human influences on greenhouse gases*, American Chemical Society National Meeting, Chicago, IL, 2022.

Kort EA, Plant G, Whiting E, Murray L, Maasakkers J, Aben I, *Estimating urban methane emissions from space*, IWGGMS-18, virtual, 2022.

Roten D, Lin JC, Kunik L, Mallia D, W, D, Oda T, Kort EA, *The Information Content of Dense Carbon Dioxide Measurements from Space: A Case Study with OCO-3*, IWGGMS-18, virtual, 2022.

Ayasse AK, Duren R, Thorpe AK, Cusworth D, Kort E, Gorchov Negron A, Nallapu Ravi teja, Japatia B, Linden P, Heckler J, Asner GP, *Mapping Emissions Over Offshore Oil and Gas platforms Using Sun Glint with Carbon Mapper*, IWGGMS-18, virtual, 2022.

Wu D, Liu J, Wennberg PO, Laughner JL, Palmer PI, Nelson RR, Lin JC, Kort EA, Eldering A, *Informing sector characteristics of urban CO 2 emissions using co-emitted trace gases*, IWGGMS-18, virtual, 2022.

*Gerlein-Safdi C, Bloom A, Kort E, Ruf C, *Using GNSS-R to better our understanding of the link between the carbon and the water cycles in tropical ecosystems*, AGU Frontiers in Hydrology, 2022.

Pu T, Gerlein-Safdi C, Kort E, Bloom A, *Using CYGNSS for High Spatio-temporal Mapping of Inundation at the Global Scale*, AGU Frontiers in Hydrology, 2022.

Thorpe A, Kort E, Duren R, Cusworth D, Herner J, Falk M, Bue B, Yadav V, Thompson D, Green R, Miller C, Frankenberg C, *COVID-19 impacts on California methane point source emissions*, EGU General Assembly 2022, Vienna, 2022.

*Huber D, Steiner AL, Kort EA, *Examining the role of soil moisture on soil NOx emissions*, AMS Annual Meeting 102, 2022.

He J, McDonald B, Li M, McKeen S, Harkins C, Henze DK, Schwantes R, Frost G, Dickerson RR, Ren X, Kort EA, Smith M, *Investigating the Emission Changes over the US during the COVID-19 Pandemic*, AMS Annual Meeting 102, 2022.

Dacic N, Plant G, Sullivan T, Kort EA, *Using airborne observations over the U.S. Corn Belt to quantify N_2O emission and evaluate underlying controlling processes*, AGU Fall meeting, New Orleans, 2021.

Dacic N, Plant G, Sullivan T, Kort EA, *Understanding the warming air that comes from food-making and animal land*, Up-Goer Five talk, AGU Fall meeting, New Orleans, 2021.

Plant G, Kort EA, Fordice G, Brandt AR, Chen Y, Gorchov Negron AM, Schwietzke S, Smith M, Sullivan T, Wilczak P, *Field Measurements of Flare Combustion Efficiencies and NO_x Production Rates in Major US Oil and Gas Basins*, AGU Fall meeting, New Orleans, 2021.

Gorchov Negron AM, Kort EA, Smith M, Plant G, Adames-Corraliza AF, Chen Y, Brandt AR, Schwietzke S, Zavala-Araiza D, Sullivan T, Wilczak P, *Emissions of CH_4, CO_2, and NO_x from Offshore Alaska Oil and Gas Activities*, AGU Fall meeting, New Orleans, 2021.

Ayasse A, Duren R, Thorpe AK, Cusworth D, Kort EA, Gorchov Negron AM, Heckler J, Asner G, *Methane Plume Mapping Over Offshore Oil and Gas platforms Using Sun Glint*, AGU Fall meeting, New Orleans, 2021.

Roten D, Mallia DV, Wu D, Lin JC, Oda T, Kort EA, *The Information Content of Dense XCO2 Retrievals: the Potential of Extracting Sector-Specific Fluxes with OCO-3*, AGU Fall meeting, New Orleans, 2021.

Thorpe AK, Kort EA, Duren R, Cusworth D, Herner J, Falk M, Bue BD, Yadav V, Thompson DR, Green RO, Miller CE, Frankenberg C, *COVID-19 impacts on California methane point source emissions,* AGU Fall meeting, New Orleans, 2021.

Puhl M, Roiger A, Fiehn A, Gorchov Negron AM, Kort EA, Schwietzke, Pisoo IJ, Foulds A, Lee JD, France JL, Allen G, *Aircraft-based Mass Balance Estimate of Methane Emissions from Offshore Gas Facilities in the Southern North Sea*, AGU Fall meeting, New Orleans, 2021.

* Kort EA, *Observing and quantifying methane emissions from space*, Society of Petroleum Engineers webinar series on Climate, 2021.

He J, McDonald B, Li M, McKeen SA, Harkins C, Schwantes R, Frost GJ, Dickerson RR, Ren X, Kort E, Smith M, *Modeling COVID Perturbation on Urban Emissions over the US*, 10th International Workshop on Air Quality Forecasting Research (IWAQFR), virtual, 2021.

Lopez-Coto I, Sweeney C, Plant G, McKain K, Ren X, Karion A, Kort E, McDonald B, Gourdji S, Miller J, Dickerson R, Shepson P, Roest G, Gurney K, Stein A, Whetstone J, *Reduction in GHG emissions in the US North East Corridor due to COVID-19 lockdowns as measured by the East Coat Outflow Experiment*, EGU general assembly, virtual, 2021.

*Kort EA, Gorchov-Negron A, Plant G, Adames-Corraliza A, Hausman C, Allan M, Stoltenberg A, Chen Y, Brandt A, Conley S, Smith M, Ward R, Wilczak P, Schwietzke S, Zavala-Araiza D, *The F^3UEL Project (Flaring & Fossil Fuels: Uncovering Emissions & Losses)*, AMS Annual Meeting 101, virtual, 2021.

Sweeney C, Lopez-Coto ILG, McKain K, Shepson P, Kort EA, Plant G, Ren X, Dickerson RR, Gourdji S, Miller J, *The East Coast Outflow Experiment before and during SARS-CoV-2*, AMS Annual Meeting 101, virtual, 2021.

Yu X, Millet DB, Wells KC, Henze DK, Cao H, Griffis TJ, Kort EA, Plant G, Deventer MJ, Kolka RK, Roman DT, Davis KJ, Desai AR, Baier BC, McKain K, Czarnetzki AC, Bloom AA, *Aircraft-*

based Inversions Quantify the Importance of Wetlands and Livestock for Upper Midwest Methane Emissions, AMS Annual Meeting 101, virtual, 2021.

*Kort EA, Thorpe AK, Duren RM, Cusworth D, Miller CE, Green RO, Eastwood ML, Bue BB, Olson-Duvall W, Chapman J, *How has the Covid-19 pandemic response impacted methane emissions in California?* AGU Fall Meeting, virtual, 2020.

Gerlein-Safdi C, Bloom AA, Plant G, Kort EA, Ruf CS, *Improved prediction of tropical wetland methane emissions using new CYGNSS-based inundation maps*, AGU Fall Meeting, virtual, 2020.

Gorchov-Negron A, Kort EA, Adames-Corraliza AF, Brandt AR, Chen Y, Conley S, Hausman C, Plant G, Schwietzke S, Smith M, Zavala-Araiza D, *Methane and Nitrogen Oxides Emissions from the Offshore Oil and Gas Supply Chain in the U.S. Gulf of Mexico*, AGU Fall Meeting, virtual, 2020.

Yang EG, Kort EA, Ott LE, Feng S, Lauvaux T, *Toward Using Space-based CO2 and NO2 observations to Estimate Urban CO2 Emissions,* AGU Fall Meeting, virtual, 2020.

Roten D, Wu D, Lin JC, Oda T, Kiel M, Eldering A, Kort EA, *Quantifying CO2 Emissions from World Megacities with Emerging Dense Urban CO2 Satellite Data: Using Lagrangian Particle Dispersion Modeling in a Los Angeles Case Study*, AGU Fall Meeting, virtual, 2020.

Duren R, Thorpe AK, Cusworth D, Kort EA, Heckler J, Olson-Duvall W, Bue B, Downey N, Dennison PE, Asner G, Green RO, Miller CE, *Methane point-source emissions from oil, gas, and coal operations*, AGU Fall Meeting, virtual, 2020.

Schimel D, Ott LE, Liu Z, Chatterjee A, Stephens BB, McKinley GA, Lovenduski NS, Liu J, Bowman KW, Kort EA, Poulter B, Miller CE, *Impacts of the Novel Coronavirus shutdowns on CO2 emissions, concentrations and distribution*, AGU Fall Meeting, virtual, 2020.

Chen Y, Shwerwin ED, Berman ESF, Jones BB, Gordon M, Kort EA, Brandt AR, *Quantifying methane emissions from oil and gas operations in the New Mexico Permian Basin with airplane-based hyperspectral detection*, AGU Fall Meeting, virtual, 2020.

Gonzalez A, Millet DB, Yu X, Baier B, DiGangi JP, Gvakharia A, Kort EA, McKain K, Plant G, *Fossil vs. non-fossil CO sources in the US: New airborne constraints from ACT-America and GEM.* AGU Fall Meeting, virtual, 2020.

Ahn D, Ren X, Stratton P, Dressen J, Shepson P, Kort EA, Sweeney C, Turner AJ, Whetstone FR, Salawitch RJ, Dickerson RR, *Reduced greenhouse gas emissions seen from the in-situ aircraft observation over the Baltimore, MD-Washington, D.C. area during COVID-19 pandemic period: Mass balance flux estimation of CO2, CO, CH4 and source sector attribution using activity metric data,* AGU Fall Meeting, virtual, 2020.

Dickerson RR, Ren X, Salawitch RJ, Canty T, He H, Ahn D, Stratton P, Hall DL, Zeng N, Dressen J, Lopez-Coto I, Karion A, Whetstone JR, Sweeney C, Stein AF, Luke WT, Kort EA, Shepson P, McDonald BC, *Measurements and models of COVID-19 impacts on short-lived pollutants and greenhouse gases over the eastern US*, AGU Fall Meeting, virtual, 2020.

*Plant G, Kort EA, Sweeney C, *Data-driven Urban Methane Emission Estimates Based on Aircraft Observations: Sensing Considerations and Results,* CLEO: Science and Innovations, Optical Society of America, virtual, 2020.

*Plant G, Kort EA, Sweeney C, *Urban Methane Emission Estimates Based on Aircraft and Satellite Observations*, Applied Industrial Spectroscopy, Optical Society of America, virtual, 2020.

Lopez-Coto I, Plant G, McKain K, Ren X, Karion A, Sweeney C, Kort EA, McDonald B, Gourdji S, Miller, JB, Dickerson RR, Shepson PB, Roest G, Gurney K, Prasad K, Whetstone JR, *East Coast*

Outflow (ECO) experiment during pandemic times, NOAA Global Monitoring Annual Conference, virtual, 2020.

*Plant G, Kort EA, Maasakkers JD, Aben I, *Exploring urban methane emissions from TROPOMI CH4 and CO observations*, NOAA Global Monitoring Annual Conference, virtual, 2020.

Long MC, Stephens BB, Sweeney C, Kort EA, Keeling RF, McKain K, *The Atmospheric Signature of Southern Ocean Carbon Fluxes*, AGU Ocean Sciences, San Diego, 2020.

Sweeney C, Plant G, Kort E, Floerchinger C, *Tracking Urban Emissions of Greenhouse Gases during the East Coast Outflow (ECO) Experiment*, AMS100, Boston, 2020.

*Kort EA, Gorchov Negron AM, Plant G, *Methane Emissions from Oil and Gas Systems: Losses in Production and Consumption*, AGU Fall Meeting, San Francisco, CA, 2019.

*Kort EA, Gvakharia A, Plant G, *Evaluating Regional N2O Emissions and Drivers Using Airborne Observations*, AGU Fall Meeting, San Francisco, CA, 2019.

Huber D, Kort EA, Steiner AL, *Space-Based Observations of Seasonal NOx Emissions from Agriculture,* AGU Fall Meeting, San Francisco, CA, 2019.

Plant G, Kort EA, Maasakkers JD, Aben I, *Urban Methane Emissions Estimates from TROPOMI CH4 and CO Observations*, AGU Fall Meeting, San Francisco, CA, 2019.

Wu D, Lin JC, Fasoli B, Oda T, Kort EA, Duarte H, *Towards quantifying urban CO2 emissions for global cities using column CO2 and SIF data*, AGU Fall Meeting, San Francisco, CA, 2019.

Sweeney C, Plant G, Kort EA, Floerchinger C, *Detecting urban emissions using commercial aircraft measurements*, AGU Fall Meeting, San Francisco, CA, 2019.

Nelson RR, Eldering A, Pavlick R, Kurosu TP, Kort EA, Oda T, Nassar R, O'Dell C, Taylor T, Somkuti P, Fisher B, Merrelli AJ, Crisp D, Kiel M, *OCO-3 Snapshot Area Mapping Mode: Early Results*, AGU Fall Meeting, San Francisco, CA, 2019.

Lin JC, Wu D, Roten D, Fasoli B, Oda T, Kort EA, *Overcoming challenges in using satellite-based CO2 data to understand carbon emissions from cities around the world*, AGU Fall Meeting, San Francisco, CA, 2019.

Yu X, Millet DB, Wells KC, Griffis TJ, Henze DK, Cao H, Conley S, Smith M, Gvakharia A, Kort EA, Plant G, Czarnetzki A, *New constraints on regional methane emissions in the US Upper Midwest based on GEM aircraft measurements and the GEOS-Chem model*, AGU Fall Meeting, San Francisco, CA, 2019.

Kort EA, *Role of Space-Based Measurements in Urban Emissions Monitoring*, IG3IS/TRANSCOM meeting, Paris, 2019.

Kort EA, *Observational constraints on anthropogenic CO_2 emissions: current capabilities and the impact on detecting carbon-climate feedbacks,* AGU Chapman Conference, Understanding Carbon Climate Feedbacks, Scripps, 2019

Kort EA, Gorchov Negron AM, Smith ML, Conley S, *Airborne observation of fugitive methane emissions from offshore oil and gas platforms,* Atmospheric Chemistry Gordon Conference, Maine, 2019.

Kort EA, Gvakharia A, Smith ML, Conley S, *Using airborne observations to quantify N_2O emissions from fertilizer plants and croplands in the Mississippi River Valley,* 8th International Symposium on Non-CO_2 Greenhouse Gases, Amsterdam, 2019.

*Kort EA, Turner AJ, Frankenberg C, *Contemporary Atmospheric Methane: Addressing Contradictions and Pathways Forwards*, AGU Fall Meeting, Washington DC, 2018.

Negron AG, Kort EA, Smith ML, Conley S, *Methane Emissions from Offshore Oil and Gas Platforms in the Gulf of Mexico*, AGU Fall Meeting, Washington DC, 2018.

Gvakharia A, Kort EA, Smith ML, Conley S, Frauhammer K, DelGrosso S, *Quantification and Analysis of Agricultural N2O Fluxes Using Continuous Airborne Atmospheric Observations*, AGU Fall Meeting, Washington DC, 2018.

Huang Y, Kort EA, Karion A, Ware J, Plant G, Sweeney C, Floerchinger CR, Mueller K, *Excess Urban Methane Emissions from the Northeast Corridor Washington, DC/Baltimore Metropolitan Region*, AGU Fall Meeting, Washington DC, 2018.

Yang EG, Kort EA, Wu D, Lin JC, Ye X, Lauvaux T, Oda T, *Toward using OCO-2 Observations and Lagrangian Modeling to Estimate Urban Carbon Dioxide Emissions in the Middle East*, AGU Fall Meeting, Washington DC, 2018.

Sweeney C, Kort EA, Floerchinger CR, Plant G, Karion A, Shepson P, *The urban methane paradox: Results from the 2018 East Coast Outflow experiment*, AGU Fall Meeting, Washington DC, 2018.

Floerchinger CR, Wofsy SC, Hainy KD, Sweeney C, Newberger T, Kort EA, Plant G, Gvakharia A, Shepson P, *Fractional methane emissions from natural gas infrastructure in urban domains in the Eastern United States using airborne measurements and Lagrangian Particle Dispersion Modeling*, AGU Fall Meeting, Washington DC, 2018.

Karion A, Callahan W, Ghosh S, Gourdji S, Lopez-Coto I, Kort EA, Mueller K, Prinzivalli S, Stock M, Prasad K, Whetstone JR, Wong TM, *Overview of the North-East Corridor: Baltimore/Washington Urban Greenhouse Gas Observation Network*, AGU Fall Meeting, Washington DC, 2018.

Yu X, Millet DB, Wells KC, Griffis TJ, Baker JM, Conley S, Smith M, Gvakharia A, Kort EA, Plant G, Wood JD, *New top-down constraints on methane emissions from animal agriculture based on GEM airborne measurements in the US Upper Midwest,* AGU Fall Meeting, Washington DC, 2018.

Kort EA, Gvakharia A, Plant G, Smith ML, Conley S, *The 2017 Fertilizer Emissions Airborne Study (FEAST): Quantifying N_2O emissions from croplands and fertilizer plants in the Mississippi River Valley,* NSF Atmospheric Chemistry Principal Investigator meeting, Boulder, 2018.

Kort EA, Gvakharia A, Smith ML, Conley S, Frauhammer K, *The 2017 Fertilizer Emissions Airborne Study (FEAST): Quantifying N_2O emissions from croplands and fertilizer plants in the Mississippi River Valley*, AGU Fall Meeting, New Orleans, 2017.

Gvakharia A, Kort EA, Smith ML, Conley S, *Airborne testing and demonstration of a new flight system based on an Aerodyne N_2O-CO_2-CO-H_2O mini-spectrometer*, AGU Fall Meeting, New Orleans, 2017.

Yang EG, Kort EA, Ware JF, Ye X, Lauvaux T, Wu D, Lin JC, Oda T, *Using OCO-2 observations and Lagrangian modeling to constrain urban carbon dioxide emissions in the Middle East*, AGU Fall Meeting, New Orleans, 2017.

Ye X, Lauvaux T, Kort EA, Oda T, Feng S, Lin J, Yang EG, Wu D, Elderling A, *Quantifying global fossil-fuel CO_2 emissions: from OCO-2 to optimal observing designs,* AGU Fall Meeting, New Orleans, 2017.

Wozniak M, Steiner A, Ault A, Kort EA, Lersch T, Casuccio G, *Lidar measurements of boundary layer depolarization and CCSEM-EDX compositional analysis of airborne particles on collocated*

passive samplers throughout the forest canopy during the 2016 airborne pollen season at UMBS, Pellston, MI, AGU Fall Meeting, New Orleans, 2017.

Gourdji SM, Yadav V, Karion A, Mueller KL, Kort EA, Conley S, Ryerson T, Nehrkorn T, *Quantifying point source emissions with atmospheric inversions and aircraft measurements: the Aliso Canyon natural gas leak as a tracer experiment*, AGU Fall Meeting, New Orleans, 2017.

Wu D, Lin J, Oda T, Ye X, Lauvaux T, Yang EG, Kort EA, *Towards Interpreting the Signal of CO2 Emissions from Megacities by Applying a Lagrangian Receptor-oriented Model to OCO-2 XCO_2 data*, AGU Fall Meeting, New Orleans, 2017.

McKain K, Sweeney C, Newberger T, Daube B, Stephens BB, Kort E, Commane R, Wofsy SC, Morgan EJ, Bent JD, Keeling RF, Montzka S, *Adaptation of a commercial greenhouse gas analyser for airborne measurements with expanded altitude range and application on the ORCAS and ATom campaigns,* GGMT, Switzerland, 2017.

Vogel FR, Turnbull J, Kort E, Gurney K, DeCola P, Tarasova O, and the IG3IS team, *Integrated urban Greenhouse Gas Information System: Advances in the urban GHG monitoring implementation plan and results of previous and current city-scale studies,* GGMT, Switzerland, 2017.

Stephens BB, Long MC, Keeling RF, Sweeney C, Kort EA, Morgan EJ, Bent JD, McKain K, Mikaloff-Fletcher S, Patra P, *Atmospheric oxygen constraints on Southern Ocean air-sea CO2 flux seasonality*, ICDC10, Switzerland, 2017.

McKain K, Sweeney C, Long M, Stephens B, Kort E, Morgan E, Bent J, Keeling R, *Using large-scale vertical gradients of atmospheric trace gases to constrain air-sea CO2 fluxes in the Southern Ocean*, ICDC10, Switzerland, 2017.

*Kort EA, Stephens BB, Long MC, Keeling R, Sweeney C, and the ORCAS Science Team, *Early Results from ORCAS: The O_2/N_2 Ratio and CO_2 Airborne Southern Ocean Study*, American Meteorological Society Annual Meeting, Seattle, 2017.

Kort EA, Yang E, Ware J, Ye X, Lauvaux T, Wu D, Lin J, Oda T, *Towards constraining megacity fossil-fuel emissions estimates with OCO-2 observations and Lagrangian modeling*, American Geophysical Union Fall meeting, San Francisco, 2016.

Hoecker-Martinez M, Kort EA, Long M, Stephens B, *Using Lagrangian flights and modeling to study O_2 and CO_2 fluxes over the Southern Ocean during the O_2/N_2 Ratio and CO_2 Airborne Study (ORCAS)*, American Geophysical Union Fall meeting, San Francisco, 2016.

Stephens B, Long M, Keeling R, Sweeney C, Kort EA, Bent J, Morgan E, Watt A, Hoecker-Martinez M, Daube B, McKain K, Smith M, Newberger T, *Southern Ocean Zonal Scale Summertime Oxygen Outgassing and Carbon Dioxide Ingassing*, American Geophysical Union Fall meeting, San Francisco, 2016.

Atlas E, Schauffler S, Donets V, Apel E, Hornbrook R, Hills A, Stephens B, Kort EA, Sweeney C, Gierach M, *Trace Gas Distributions and Correlations Observed in The Southern Ocean Atmosphere During the ORCAS Mission*, American Geophysical Union Fall meeting, San Francisco, 2016.

Smith M, Kort EA, Gvakharia A, Sweeney C, Conley S, *Airborne Quantification of Methane Emissions over the Four Corners Region*, American Geophysical Union Fall meeting, San Francisco, 2016.

Thorpe A, Frankenberg C, Thompson D, Duren R, Aubrey A, Bue B, Green R, Gerilowski K, Krings T, Borchardt J, Kort EA, Sweeney C, Conley S, Roberts D, Dennison P, Ayasse A, *Attributing Methane and Carbon Dioxide Emissions from Anthropogenic and Natural Sources Using AVIRIS-NG*, American Geophysical Union Fall meeting, San Francisco, 2016.

Ware J, Yadav V, Mueller K, Kort EA, Verhulst K, *Robustness to Atmospheric Transport Error in Urban Greenhouse Gas Flux Inversion: a Los Angeles Case Study*, American Geophysical Union Fall meeting, San Francisco, 2016.

Ye X, Lauvaux T, Kort EA, Lin J, Oda T, Yang E, *Inverse modeling of fossil fuel CO_2 emissions at urban scale using OCO-2 retrievals of total column CO_2*, American Geophysical Union Fall meeting, San Francisco, 2016.

Barkley Z, Lauvaux T, Davis K, Deng A, Miles N, Richardson S, Martins D, Cao Y, Sweeney C, McKain K, Schwietzke S, Smith M, Kort EA, *Top-down Estimate of Methane Emissions from Natural Gas Production in Northeastern Pennsylvania Using Aircraft and Tower Observations*, American Geophysical Union Fall meeting, San Francisco, 2016.

*Kort EA, Smith M, Gvakharia A, Sweeney C, Frankenberg C, Conley S, *TOPDOWN 2015: A Multi-aircraft Assessment of Methane Emissions in the Four Corners Region*, American Geophysical Union Fall meeting, San Francisco, 2015.

Ware J, Kort E, Duren R, DeCola P, *Remote Sensing of Urban Mixed Layer Structure in Los Angeles, with Applications to Greenhouse Gas Emissions Quantification*, American Geophysical Union Fall meeting, San Francisco, 2015.

Gvakharia A, Kort E, Sweeney C, Peischl J, Ryerson T, Brandt A, Smith M, *Quantitative airborne assessment of gas flaring combustion efficiency in the Bakken Shale*, American Geophysical Union Fall meeting, San Francisco, 2015.

Smith M, Kort E, Karion A, Sweeney C, Gvakharia A, *Quantification of Methane and Ethane Emissions from the San Juan Basin*, American Geophysical Union Fall meeting, San Francisco, 2015.

Sweeney C, Kort E, Rella C, Conley S, Karion A, Lauvaux T, Frankenberg C, *Using a multi-scale approach to identify and quantify oil and gas emissions: a case study for GHG emissions verification*, American Geophysical Union Fall meeting, San Francisco, 2015.

Thorpe A, Thompson D, Frankenberg C, Aubrey A, Bue B, Green R, Kort E, Eastwood M, Helmlinger M, Nolte S, *Directly attributing methane emissions to point source locations using the next generation Airborne Visible/Infrared Imaging Spectrometer (AVIRIS-NG)*, American Geophysical Union Fall meeting, San Francisco, 2015.

Cui Y, Brioude J, Angevine W, McKeen S, Peischl J, Nowak J, Henze D, Bousserez, Fischer M, Jeong S, Liu Z, Michelsen H, Santoni G, Daube B, Kort E, Frost G, Ryerson T, Wofsy S, Trainer M, *Inverse Estimation of California Methane Emissions and Their Uncertainties using FLEXPART-WRF*, American Geophysical Union Fall meeting, San Francisco, 2015.

Patra P, Saeki T, Dlugokencky E, Ishijima K, Umezawa T, Ito A, Aoki S, Morimoto S, Kort E, Crotwell A, Kumar K, Nakazawa T, *Regional emission and loss budgets of atmospheric methane (2002–2012)*, American Geophysical Union Fall meeting, San Francisco, 2015.

Barkley Z, Davis K, Lauvaux T, Miles N, Richardson S, Martins D, Deng A, Cao Y, Sweeney C, Karion A, Smith M, Kort E, Schwietzke S, *Constraining Methane Emissions from Natural Gas Production in Northeastern Pennsylvania Using Aircraft Observations and Mesoscale Modeling*, American Geophysical Union Fall meeting, San Francisco, 2015.

Stephens BB, Bent JD, Watt AS, Shertz SR, Keeling RF, Wofsy SC, Kort EA, Daube BC, Santoni GW, *Airborne measurements of oxygen concentration from the surface to the lower stratosphere*, GGMT, Scripps, 2015.

*Kort EA, *Observing the Anthropogenic Miasma: Methane, Ethane, and Carbon Dioxide*, Atmospheric Chemistry Gordon Research Conference, Waterville Valley, NH, 2015.

Kort EA et al., *OCO-2, megacities, and mixed layer depths*, Los Angeles – Paris Megacities Carbon project meeting, Paris, France, 2015.

Ware J, Kort EA, DeCola P, Duren R, *PBL observations and analysis*, Megacities Carbon Project Workshop, Pasadena, CA, 2015.

Kort EA et al., *OCO-2 spatial gradient studies*, Megacities Carbon Project Workshop, Pasadena, CA, 2015.

*Kort EA, Smith M, Gvakharia A, Sweeney C, Karion A, Peischl J, Ryerson T, Frankenberg C, Dubey M, *Locating, quantifying, and attributing methane emissions from fossil-fuel extraction*, American Chemical Society National Meeting, Denver, CO, 2015.

Duren RM, Gurney KR, Miller C, Kort EA, Rao P, Eldering A, Keeling R, Weiss R, Miller J, Lehman S, Fischer M, *Understanding the carbon emissions of megacities*, NACP PI meeting, Washington DC, 2015.

*Kort EA, Ware J, Duren R, Schimel D, Miller CE, DeCola P, *Informing urban carbon emissions with atmospheric observations: motivation, methods, and reducing uncertainties,* AGU Fall meeting, San Francisco, 2014.

Smith M, Kort E, Karion A, Sweeney C, Peischl J, Ryerson T, *Airborne Ethane Observations over the Barnett and Bakken Shale Formations: Quantification of Ethane Fluxes and Attribution of Methane Emissions*, AGU Fall meeting, San Francisco, 2014.

Lavoie T, Shepson P, Cambaliza MO, Karion A, Sweeney C, Kort EA, Hirst B, Wolter S, Conley S, Faloona I, Lyon D, Alvarez R, *Measurements of Point Source Methane Emissions in the Barnett Shale and Eagle Ford Basins*, AGU Fall meeting, San Francisco, 2014.

*Miller S, Xiang B, Kort E, Michalak A, Wofsy S, Andrews A, Dlugokencky E, *Regional to national constraints on US N_2O emissions using atmospheric data*, AGU Fall meeting, San Francisco, 2014.

Wong C, Fu D, Pongetti T, Newman S, Kort E, Duren R, Hsu Y, Miller C, Yung Y, Sander S, *Estimating Top-down Emissions (2011-2014) of CH_4 and CO_2 from Los Angeles by an FTS Atop Mount Wilson*, AGU Fall meeting, San Francisco, 2014.

Gray J, Frolking S, Kort E, Ray D, Kucharik C, Ramankutty N, Friedl M, *A direct human influence on atmospheric CO_2 seasonality from increased cropland productivity*, AGU Fall meeting, San Francisco, 2014.

*Duren R, Gurney K, Hutyra L, Miller C, Kort E, Rao P, Eldering A, *Characterizing the carbon emissions of megacities*, AGU Fall meeting, San Francisco, 2014.

*Graven H, Keeling R, Piper S, Patra P, Stephens B, Wofsy S, Welp L, Sweeney C, Tans P, Kelley J, Daube B, Kort E, Santoni G, Bent J, Thomas R, Prentice I, *Enhanced Seasonal Exchange of CO_2 by Northern Ecosystems—Observations and Models*, AGU Fall meeting, San Francisco, 2014.

Miller S, Michalak A, Wofsy S, Andrews A, Biraud S, Dlugokencky E, Fischer M, Janssens-Maenhout G, Kort E, Miller B, Miller J, Montzka S, Worthy D, *Methane emissions in the US and Canada: contributions of various source sectors and evolution of emissions over time*, AGU Fall meeting, San Francisco, 2014.

Mielke-Maday I, Petron G, Miller B, Frost G, Peischl J, Kort E, Smith M, Karion A, Dlugokencky E, Montzka S, Sweeney C, Ryerson T, Tans P, Schnell R, *Hydrocarbon emissions in the Bakken oil field in North Dakota*, AGU Fall meeting, San Francisco, 2014.

Peischl J, Ryerson T, Karion A, Aikin K, Kort E, Newberger T, Smith M, Sweeney C, Trainer M, Wolter S, *A quantification of methane emissions from the Bakken shale play region of North Dakota*, AGU Fall meeting, San Francisco, 2014.

Bent J, Keeling R, Stephens B, Wofsy S, Daube B, Kort E, Pittman J, Jimenez-Pizarro R, Santoni G, *Observations of a stratospheric depletion and annual mean interhemispheric gradient in the atmospheric Ar/N_2 ratio from the HIPPO Global campaign*, AGU Fall meeting, San Francisco, 2014.

*Wofsy SC, Kort E, Crosson E, Keutsch F, *Recent developments in measurements of atmospheric trace gases*, CLEO: Science and Innovations, 2014.

Kort EA, Smith ML, Karion A, Sweeney C, Frankenberg C, Wunch D, Costigan K, Lindenmaier R, Dubey M, *New Space-based and Airborne measurements and approaches to quantify and attribute Methane emissions*, Global Emissions InitiAtive (GEIA) conference, Boulder, CO, 2014.

Kort EA, Frankenberg C, Wunch D, Costigan K, Lindenmaier R, Dubey M, *Space-based observations of anomalous methane emissions: Four Corners*, IWGGMS10, Noordwijk, Netherlands, 2014.

Wong C, Fu D, Pongetti T, Newman S, Kort E, Duren R, Hsu YK, Miller C, Yung Y, Sander S, *Tracking greenhouse gas emissions from a US megacity by remote sensing from a mountaintop site*, EGU General Assembly Conference, Vienna, 2014.

*Kort EA, et al., *Why and how to use atmospheric observations to study carbon emissions from LA and other megacities*, AGU Fall meeting, San Francisco, 2013.

*Kort EA, et al., *Towards resolving North America's methane mystery with atmospheric observations*, AGU Fall meeting, San Francisco, 2013.

Hopkins FM, Randerson JT, Bush S, Ehleringer JR, Lai C, Kort EA, Blake DR, *Methane Hotspots in the Los Angeles Megacity*, AGU Fall meeting, San Francisco, 2013.

Dubey M, Lindemaier R, Arata C, Costigan KR, Frankenberg C, Kort EA, Rahn TA, Henderson BG, Love SP, Aubrey AD, *Field Observations of Methane Emissions from Unconventional and Conventional Fossil Fuel Exploration*, AGU Fall meeting, San Francisco, 2013.

Kort EA, Frankenberg C, Miller CE, Dubey M, Costigan K, Lindenmaier R, *Earth and Space-based observations of CO_2 and CH_4 to quantify and attribute anthropogenic emissions*, Gordon Research Conference, Mt. Snow, VT, 2013. (poster)

Wong KW, Fu D, Sander S, Pongetti T, Kort E, Newman S, Yung Y, *Mapping greenhouse gas emissions in the Los Angeles basin by remote sensing using a Fourier Transform Spectrometer on Mt. Wilson*, EGU General Assembly Conference, Vienna, 2013.

Kort EA, Angevine W, DeCola P, Duren R, Frankenberg C, Miller CE, Newman S, Oda T, Roehl C, Wennberg PO, Wunch D, *Detecting policy-relevant megacity greenhouse gas emission changes from space and earth-based observations*, NACP All-Investigators Meeting, Albuquerque, 2013.

*Kort EA, Frankenberg C, Miller CE, Oda T, *Observing megacity greenhouse gas emissions from space*, AGU Fall meeting, San Francisco, 2012.

*Kort EA, Angevine W, Decola P, Duren R, Miller CE, Newman S, Roehl C, Wennberg P, Wunch D, *Detecting policy-relevant greenhouse gas emission changes with atmospheric observations*, AGU Fall meeting, San Francisco, 2012.

Worden J, Wecht K, Frankenberg C, Alvarado MJ, Bergamaschi P, Bowman KW, Kort EA, Kulawik SS, Lee M, Payne V, Worden HM, *Top-down and bottom up estimates of methane emissions from the 2006 Indonesian peat fires*, AGU Fall meeting, San Francisco, 2012.

Jacob DJ, Wang Q, Wecht K, Perring AE, Schwarz JP, Spackman JR, Fahey DW, Kort EA, Wofsy SC, *Using HIPPO observations to constrain the atmospheric budgets of black carbon and methane*, AGU Fall meeting, San Francisco, 2012.

Peischl J, McKeen SA, Neuman J, Nowak JB, Ryerson TB, Trainer M, Commane R, Daube B, Kort EA, Santoni GW, Wofsy SC, Xiang B, Parrish DD, *Emissions of Methane, Nitrous Oxide, and Ammonia from California's San Joaquin Valley,* AGU Fall meeting, San Francisco, 2012.

Pittman JV, Wofsy SC, Baube B, Kort EA, Santoni GW, Jimenez-Pizarro R, Park S, Gao R, Spackman JR, Moore FL, Hintsa EJ, Elkins JW, Montzka SA, Miller BR, Sweeney C, Zondlo MA, Diao M, Patra PK, Ishijima K, *Examination of the Tropical Tropopause Layer during HIPPO*, AGU Fall meeting, San Francisco, 2012.

Kulawik SS, Bowman KW, Lee M, Jones DB, Worden J, Nassar R, O'Dell CW, Wofsy SC, Wunch D, Wennberg PO, Griffith DW, Sherlock V, Deutscher NM, Notholt J, Warneke T, Morino I, Sussmann R, Jimenez-Pizarro R, Park S, Daube B, Pittman JV, Stephens BB, Kort EA, Sandtoni GW, *Constraints on tropospheric CO_2 from TES and ACOS-GOSAT assessed with TCCON and HIPPO measurements*, AGU Fall meeting, San Francisco, 2012.

Patra PK, Wofsy SC, Ishijima K, Ghosh A, Stephens BB, Atlas EL, Montzka SA, Elkins JW, Kort EA, Santoni GW, Pittman JV, Daube B, Moore FL, Miller BR, Hinsta EJ, *Evaluation of ACTM forward simulations using HIPPO*, AGU Fall meeting, San Francisco, 2012.

Stephens BB, Wofsy SC, Bent JD, Daube B, Graven HD, Jimenez-Pizarro R, Keeling RF, Kort EA, Park S, Pittman JV, Santoni GW, Sweeney C, *Seasonal Northern Hemispheric CO_2 Exchange as Observed by HIPPO*, AGU Fall meeting, San Francisco, 2012.

Wofsy SC, Stephens BB, Keppel-Aleks G, Baube B, Pittman JV, Park S, Jimenez-Pizarro R, Santoni GW, Kort EA, Atlas EL, Moore FL, Elkins JW, Perring AE, Romashkin P, Patra PK, Jacob DJ, Wecht K, Bent JD, Keeling RF, *Global distributions of CO_2, trace gases and potential temperature in HIPPO: lessons about global rates of tracer transport and inverse modeling*, AGU Fall meeting, San Francisco, 2012.

Duren RM, Kort EA, Miller CE, *The Megacities Carbon Project: measuring urban carbon emissions*, AGU Fall meeting, San Francisco, 2012.

Newman S, Xu S, Kort EA, Miller CE, Sander S, Duren RM, Eldering A, Yung YL, *Seasonal Variations in Fossil Fuel Emissions in the Los Angeles Megacity*, AGU Fall meeting, San Francisco, 2012.

Santoni GW, Xiang B, Kort EA, Daube B, Andrews AE, Sweeney C, Wecht K, Peischl J, Ryerson TB, Angevine WM, Trainer M, Nehrkorn T, Eluskiewicz J, Wofsy SC, *California's Methane Budget derived from CalNex P-3 Aircraft Observations and the WRF-STILT Lagrangian Transport Model*, AGU Fall meeting, San Francisco, 2012.

Chang RY, Miller CE, Dinardo SJ, Karion A, Sweeney C, Daube B, Pittman JV, Miller JB, Budney JW, Gottlieb EW, Santoni GW, Kort EA, Wofsy SC, *Greenhouse gas measurements from aircraft during CARVE*, AGU Fall meeting, San Francisco, 2012.

Perring AE, Schwarz JP, Spackman JR, Gao R, Watts LA, Daube B, Santoni GW, Kort EA, Pittman JV, Wofsy SC, Fahey DW, *An analysis of black carbon in the northern Pacific*, AGU Fall meeting, San Francisco, 2012.

Hintsa EJ, Moore FL, Dutton GS, Hall BD, Nance JD, Hurst DF, Novelli PC, Elkins JW, Daube B, Kort EA, Pittman JV, Santoni GW, Jaegle L, *The Atmospheric Distribution of Molecular Hydrogen (H_2) and Related Species During HIPPO and Other Recent Airborne Missions*, AGU Fall meeting, San Francisco, 2012.

Kort EA, Frankenberg C, Miller CE, *Space-based Observations of Megacity Carbon Dioxide*, IWGGMS8, Caltech, 2012.

Kort EA, *Urban CO_2 and CH_4 source attribution and network sensitivity*, Megacities Carbon Project workshop, Caltech, Pasadena, CA 2012.

Kort EA, *Estimating emissions trends from Atmospheric Concentrations*, Megacities Carbon Project workshop, Caltech, Pasadena, CA 2012.

Kort EA, Miller CE, Duren R, Eldering A, Sander S, Newman S, *Megacity Carbon: Observing system study for tracking Los Angeles greenhouse gas emission trends*, EGU Meeting, Vienna, Austria, 2012.

Newman S, Hsu YK, Kort EA, Sander SP, Eldering A, Duren RM, Miller CE, Yung YL, *Initial results from a CO_2 monitoring network in the Los Angeles megacity*, EGU Meeting, Vienna, Austria, 2012.

Kort EA, *Arctic methane: that which comes from the sea*, HIPPO Science Team Meeting, Boulder, CO, 2012.

Kort EA, Miller CE, Duren R, Eldering A, Sander S, Newman S, *Megacity Carbon: Initial network design for Los Angeles*, AGU Fall Meeting, San Francisco, CA, 2011.

Payne V, Xiao Y, Eluszkiewicz J, Henderson J, Nehrkorn T, Sweeney C, Andrews AE, Worden J, Kulawik S, Worthy D, Shephard MW, Wofsy SC, Kort EA, Wecht K, Tian H, *Constraints on High-Latitude Regional Methane Fluxes Through Integration of Satellite, Aircraft and Ground-Based Observations with Models*, AGU Fall Meeting, San Francisco, CA, 2011.

Miller SM, Kort EA, Worthy D, Havice TC, Dlugokencky EJ, Andrews AE, Wofsy SC, *Large-scale environmental drivers of North American methane emissions*, AGU Fall Meeting, San Francisco, CA, 2011.

Pan L, Munchak L, Kinnison DE, Wofsy SC, Pittman JV, Kort EA, Daube B, Atlas EL, *On The Use of in situ Chemical Tracer Measurements in Diagnosing Chemistry Climate Models*, AGU Fall Meeting, San Francisco, CA, 2011.

Guerrero OJ, Jimenez R, Lin JC, Diskin GS, Sachse GW, Kort EA, Kaplan JO, *Bayesion-inversion adjusted methane fluxes in Colombia and Panama*, AGU Fall Meeting, San Francisco, CA, 2011.

Peischl J, Ryerson TB, Andrews AE, Commane R, Daube B, Diskin GS, Dlugokencky EJ, Frost GJ, Holloway JS, Kofler J, Kort EA, Lang P, Masarie K, McKeen SA, Novelli PC, Sachse GW, Santoni GW, Trainer M, Vay SA, Wofsy SC, Xiang B, Parrish DD, *Emissions of Methane from the Los Angeles Basin and Comparison to Inventories*, AGU Fall Meeting, San Francisco, CA, 2011.

Smith K, Atlas EL, Zhu X, Pope L, Lueb R, Moore FL, Miller BR, Montzka SA, Elkins JW, Nance D, Sweeney C, Pan L, Kinnison DE, Hendershot R, Romashkin P, Wofsy SC, Daube B, Kort EA, Jimenez R, Pittman JV, *Selected trace gas distributions and relationships: a comparison of HIAPER Pole to Pole Observations (HIPPO) and the Whole Atmosphere Community Climate Model (WACCM)*, AGU Fall Meeting, San Francisco, CA, 2011.

Kort EA, *High-resolution Inverse Modeling for LA*, Monitoring CO_2 in Megacities: Paris – Los Angeles workshop, Paris, France, 2011.

Kort EA, *Atmospheric observations and emissions estimates of methane and nitrous oxide from regional to global scale*, Harvard University, Cambridge, MA, 2011.

Kort EA, *Non-CO_2 inter-instrument comparisons*, HIPPO science team meeting, Boulder, CO 2011.

Kort EA, *Tropical N_2O, Arctic CH_4, and future TRANSCOM comparisons*, HIPPO science team meeting, Boulder, CO 2011.

Kort EA, *Harvard QCLS instrument*, HIPPO science team meeting, Boulder, CO 2011.

Kort EA, Daube BC, Ishijima K, Patra P, Jimenez R, Wofsy SC, *Global distributions of nitrous oxide and implications for emissions: Measurements from the HIPPO (HIaper Pole to Pole Observations) campaign and comparisons to a global model*, AGU Fall Meeting, San Francisco, CA, 2010. (poster)

Thompson RL, Bousquet P, Chevallier F, Dlugokencky EJ, Vermeulen AT, Aalto T, Haszpra L, meinhardt F, O'Doherty S, Moncrieff JB, Popa M, Steinbacher M, Jordan A, Scheck TJ, Brenninkmeijer CA, Wofsy SC, Kort EA, *Inverse modeling estimates of N_2O surface emissions and stratospheric losses using a global dataset*, AGU Fall Meeting, San Francisco, CA, 2010.

Smith K, Atlas EL, Zhu X, Pope L, Lueb R, Miller BR, Moore FL, Montzka SA, Elkins JW, Nance D, Sweeney C, Wofsy SC, Daube BC, Kort EA, Jimenez R, Pittman JV, Hendershot R, Romashkin P, *Trace gas distributions and relationships in the remote atmosphere: Results from the HIAPER Pole to Pole Observatins (HIPPO) flights*, AGU Fall Meeting, San Francisco, CA, 2010.

Perring AE, Spackman JR, Schwarz JP, Watts L, Gao R, Brock CA, Commane R, Daube BC, Frost GJ, Holloway JS, Kort EA, Peischl J, Pollack IB, Ryerson TB, Santoni GW, Stark H, Trainer M, Wofsy SC, Xiang B, Fahey DW, *Aircraft observations of refractory black carbon during CalNex 2010*, AGU Fall meeting, San Francisco, 2010.

Ishijima K, Kort EA, Crotwell AM, Dlugokencky EJ, Patra PK, Tans PP, Wofsy SC, *Latitudinal gradient of nitrous oxide: inferring source distribution from global measurements and model*, AGU Fall meeting, San Francisco, 2010.

Kort EA, *Regional to global scale inversions on non-CO_2 greenhouse gases*, TRANSCOM, LBNL, Berkeley, CA, 2010.

Kort EA, Miller S, Havice T, Sweeney C, Andrews AE, Dlugokencky EJ, Tans PP, Hirsch A, Worth D, Eluszkiewicz J, Nehrkorn T, Michalak AM, Tian H, Wofsy SC, *Spatial and Temporal Distributions of Methane and Nitrous Oxide Emissions in North America*, NASA Terrestrial Ecology Science Team Meeting, La Jolla, CA, 2010. (poster)

Kort EA, Sweeney C, Andrews AE, Dlugokencky EJ, Tans PP, Hirsch A, Eluszkiewicz J, Nehrkorn T, Michalak AM, Wofsy SC, *Do aircraft-based atmospheric observations indicate that anthropogenic methane emissions in the United States are larger than reported?*, AGU Fall Meeting, San Francisco, CA, 2009. (poster)

Pickett-Heaps C, Jacob DJ, Wecht K, Drevet J, Diskin GS, Wofsy S, Worthy D, Kort EA, Jimenez R, Daube B, Park S, *New estimate of methane emissions from the Hudson Bay Lowlands using aircraft observations from the ARCTAS and Pre-HIPPO airborne campaigns*, AGU Fall Meeting, San Francisco, CA, 2009.

Atlas E, Lueb R, Zhu X, Pope L, Pan L, Schauffler S, Tilmes S, Hall B, Weinheimer A, Flocke F, Pollack I, Zheng W, Montzka D, Knapp D, Campos T, Hendersot R, Moore F, Hurst D, Elkins J, Gao R, Wofsy S, Daube B, Jimenez R, Park S, Kort E, Bowman KP, *Trace gas distributions and correlations observed during START08*, AGU Fall Meeting, San Francisco, CA, 2009.

Kort EA, Daube BC, Wofsy SC, Andrews A, Hirsch A, Sweeney C, Dlugokencky E, Miller J, Tans P, Eluszkiewicz J, Nehrkorn T, Michalak A, Stephens B, Gerbig C, Kaplan J, Houweling S, *Atmospheric constraints on emissions of methane and nitrous oxide in North America from atmospheric measurements and a receptor-oriented modeling framework*, NCGG5, Wageningen, The Netherlands, 2009.

Wofsy S, Daube B, Jimenez R, Park S, Kort E, *Measurements of atmospheric CO_2, CH_4, CO and N_2O from the HIAPER GV aircraft in April-June 2008*, AGU Fall Meeting, San Francisco, CA, 2008.

Kort EA, *Methane and Nitrous Oxide in North America: Using an LPDM to Constrain Emissions*, Non-CO_2 Greenhouse Gas Synthesis Workshop, Boulder, CO, 2008.

*Kort EA, Eluszkiewicz J, Stephens BB, Miller JB, Gerbig C, Nehrkorn T, Daube BC, Kaplan JO, Houweling S, Wofsy SC, *Atmospheric constraints on emissions of Methane and Nitrous Oxide in North America*, Ameriflux, Boulder, CO, 2008.