

## Eric A. Kort

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### RESEARCH APPOINTMENTS

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<b>Associate Professor</b>	2019-present
Associate Chair for Graduate Studies (2022-)	
Climate and Space Sciences and Engineering, Applied Physics	
University of Michigan, Ann Arbor, MI	
<b>Assistant Professor</b>	2013-2019
Climate and Space Sciences and Engineering, Applied Physics	
University of Michigan, Ann Arbor, MI	
<b>W. M. Keck Institute for Space Studies Postdoctoral Fellow</b>	2011-2013
Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA	

### EDUCATION

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

### RECOGNITIONS

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NCAR Affiliate Scientist	2022-2025
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

### AIRBORNE CAMPAIGNS

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

\*\*Flaring & Fossil Fuels: Uncovering Emissions and Losses (F<sup>3</sup>UEL), 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 N<sub>2</sub>O, 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<sub>2</sub>/N<sub>2</sub> Ratio and CO<sub>2</sub> 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

## TEACHING

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Earth System Evolution (AOSS 320, CLIMATE 320), University of Michigan, Fall 2014- 2016, 2018, 2021, 2022  
Atmospheric Chemistry (CLIMATE 479), University of Michigan, Winter 2021  
Climate and the Media (CLIMATE/EARTH 140), University of Michigan, Winter 2022  
Earth System Interactions (AOSS 475), University of Michigan, Winter 2014-2019  
AOSS Seminar (AOSS 749), University of Michigan, Fall 2014 & Winter 2015

## SERVICE ACTIVITIES

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Chair of Scientific Advisory Committee, Carbon Mapper, Inc. (2021-)  
Topic Chair, International Bureau of Weights and Measures/World Meteorology Organization Metrology for Climate Action workshop, 2022  
Science and Technology in Society forum, Japan, 2022  
National Academies of Sciences, Engineering, and Medicine (NASEM) Committee member on the *Future Use of NASA Airborne Platforms to Advance Earth Science Priorities*, (2020-2021)  
Permian Methane Analysis Project, Environmental Defense Fund, Scientific Advisory Panel (2019-present)  
European Commission Joint Research Centre workshop participant and report co-author “Atmospheric monitoring and inverse modeling for verification of GHG inventories” (2017-2018)  
Japanese National Institute for Environmental Studies (NIES), workshop participant and report co-author “A guidebook on the use of satellite greenhouse gases observation data for verification of greenhouse gases emission inventories” (2017-2018)  
Co-lead for Workshop Towards Addressing Major Gaps in the Global Methane Budget, Linde Center, Caltech (2017)  
World Meteorological Organization Integrated Global GHG Information System (IG<sup>3</sup>IS) planning & implementation team (2016-2020)  
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)  
 American Geophysical Union member

*University of Michigan service:*

Associate Chair for Graduate Studies, CLaSP Department (2022-)  
 Co-lead UM CLaSP department AGU Bridge program (2022-)  
 Co-creator/director of Climate Change Solutions graduate certificate program (2020-)  
 Michigan Engineering ONRAMP Faculty Advisory Board (2021-)  
 College of Engineering Energy Institute visioning committee (2021-2022)  
 Climate and Space Sciences and Engineering graduate admissions chair (2021-); graduate committee (2020-); curriculum committee (2020-); 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)  
 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)  
 PhD committees chaired/co-chaired: John Ware (2018, Physics), Alexander (Sandro) Gvakharia (2019, Applied Physics), Emily Yang (2022, CLaSP).

*Review tasks:*

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 & panelist reviewer (*NASA*, *NSF*, *NERC*, *NSERC*, *Belmont Forum*, *Netherlands Space Office*, *Swedish National Space Board*) & panelist for *NASA* (2013, 2014 [2], 2016, 2019)

INVITED SEMINARS

NASA Jet Propulsion Laboratory, Carbon Cycle seminar (2022); Andrews University, Chemistry & Biochemistry (2019); Max Planck Institute for Biogeochemistry, Jena, Germany (2017); University of California- Berkeley, Berkeley Atmospheric Sciences Center Seminar (2017); University of Colorado-Boulder, Atmospheric and Oceanic Sciences (2017); California Institute of Technology, Environmental Science and Engineering (2017); University of Washington, Atmospheric Science (2017); University of Toronto, Center for Global Change Science Distinguished Lecturer Series (2017); Dartmouth College (2017); NASA GMAO, Goddard Space Flight Center (2015); NOAA ESRL Chemical Science Division (2014); University of Michigan, Atmospheric, Oceanic and Space Sciences (2014); UiT The Arctic University of Norway, (CAGE) Centre for Arctic Gas Hydrate, Environment, and Climate (2013); Boston

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

## PUBLICATIONS

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As of Sept. 2022: Google Scholar h-index = 49, total citations = 9032  
(indicates Kort group member)

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*, <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, Maasackers 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. Hintsä E, 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 CO<sub>2</sub> 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, Maasackers 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<sub>x</sub> 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 N<sub>2</sub>O 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<sub>2</sub> emissions from urban area using OCO-2 observations of total column CO<sub>2</sub>*, J. Geophys. Res. Atmospheres, doi: 10.1029/2019JD030528, 2020.
73. Wu D, Lin JC, Oda T, Kort EA, *Space-based quantification of per capita CO<sub>2</sub> 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 O<sub>2</sub> and CO<sub>2</sub> 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<sub>2</sub> 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<sub>2</sub>O, CO<sub>2</sub>, CO, and H<sub>2</sub>O 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<sub>2</sub> Emissions from Satellite Observations of Atmospheric Column CO<sub>2</sub> (XCO<sub>2</sub>): 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 O<sub>2</sub>/N<sub>2</sub> Ratio and CO<sub>2</sub> 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.
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#### PRESENTATIONS & POSTERS (\*invited)

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(indicates Kort group member)

\*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, Maasackers 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<sub>2</sub> 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 NO<sub>x</sub> 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<sub>2</sub>O 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<sub>x</sub> Production Rates in Major US Oil and Gas Basins*, AGU Fall meeting, New Orleans, 2021.
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- 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 XCO<sub>2</sub> 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.
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- \*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<sup>3</sup>UEL 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, Gourджи 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.
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- Yang EG, Kort EA, Ott LE, Feng S, Lauvaux T, *Toward Using Space-based CO<sub>2</sub> and NO<sub>2</sub> observations to Estimate Urban CO<sub>2</sub> Emissions*, AGU Fall Meeting, virtual, 2020.
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