

NOAA ESRL GLOBAL MONITORING ANNUAL CONFERENCE 2017

David Skaggs Research Center, Room GC-402
325 Broadway, Boulder, Colorado 80305 USA

Tuesday Morning, May 23, 2017 AGENDA

(Only presenter's name is given; please refer to abstract for complete author listing.)

		Page No.
07:00	Registration Opens in GC-402 - lunch orders and posters collected at registration table	
07:30 - 08:15	Morning Snacks - coffee, tea, fruit, bagels and donuts served	
Session 1	Welcome, Keynote Address & Highlights — Chaired by Russell C. Schnell	
08:15 - 08:30	Welcome and Conference Overview <i>James H. Butler (NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))</i>	-
08:30 - 09:00	Keynote Address - Climate, Melting Ice And Rising Seas: Observing and Understanding to Reduce Risks <i>Richard B. Alley (The Pennsylvania State University, Department of Geosciences, and Earth and Environmental Systems Institute)</i>	1
09:00 - 09:15	Highlighted Speaker - Implications of the Continued Increase in Atmospheric Methane Burden <i>Edward J. Dlugokencky (NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))</i>	2
09:15 - 09:30	Highlighted Speaker - Black Carbon Measurements at Cape Grim, Tasmania <i>Fabienne Reisen (Commonwealth Scientific and Industrial Research Organisation (CSIRO), Oceans and Atmosphere, Aspendale, Australia)</i>	3
09:30 - 09:45	Highlighted Speaker - Ozone, Aerosol and Carbon Gases at the Mt. Bachelor Observatory <i>Dan Jaffe (University of Washington)</i>	4
9:45 - 10:15	Morning Break & Group Photo on the Stage	
Session 2	Carbon Cycle & Greenhouse Gases - Global Observations — Chaired by Stefan Schwietzke	
10:15 - 10:30	How We Know that Human Activities Are Driving Climate Change <i>Pieter P. Tans (NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))</i>	5
10:30 - 10:45	Sources of Systematic Differences in Global CO ₂ Inverse Model Results <i>Benjamin Gaubert (National Center for Atmospheric Research (NCAR), Atmospheric Chemistry Observations and Modeling Laboratory)</i>	6
10:45 - 11:00	10 Years of Observation for Greenhouse Gases by Commercial Airlines In the CONTRAIL Project <i>Yousuke Sawa (Meteorological Research Institute, Tsukuba, Japan)</i>	7
11:00 - 11:15	Nitrous Oxide Emissions Estimated with the Carbon Tracker-Lagrange North American Regional Inversion Framework <i>Cynthia Nevison (Institute of Arctic and Alpine Research (INSTAAR), University of Colorado)</i>	8
11:15 - 11:30	Vertical Gradients in Atmospheric CO ₂ as a Constraint on Southern Ocean Fluxes <i>Kathryn McKain (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	9
11:30 - 11:45	Toward Improvement on Estimation of North American CO ₂ Fluxes from CarbonTracker-Lagrange: A High-Resolution Regional Inverse Modeling System for Assimilating Atmospheric CO ₂ <i>Lei Hu (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	10
11:45 - 12:00	Multi-species Atmospheric Inversion of Sectoral Greenhouse Gas Emissions in the Indianapolis Urban Environment <i>Brian Nathan (The Pennsylvania State University, Department of Meteorology)</i>	11
12:00 - 13:00	Catered Lunch - Outreach Classroom GB-124 (pre-payment of \$12.00 at registration)	

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Session 3	Global Radiation — Chaired by Allison McComiskey	
13:00 - 13:15	Surface Energy Budget Process Relationships as a Means for Evaluating Model Performance in Central Greenland <i>Matthew Shupe (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	12
13:15 - 13:30	Drivers and Environmental Responses to the Changing Annual Snow Cycle of Northern Alaska <i>Christopher J. Cox (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	13
13:30 - 13:45	Arctic Heat Waves: Towards Quantifying the Role of Atmospheric Dynamics <i>Robert S. Stone (Science and Technology Corporation)</i>	14
13:45 - 14:00	Changing Air Quality in the Southeast U.S. and Potential Implications for Regional Solar Radiation Budget <i>James Patrick Sherman (Appalachian State University, Department of Physics and Astronomy)</i>	15
14:00 - 14:15	Surface-measured Trends of Aerosol Optical Depth as an Indicator of Stratospheric Aerosol Trends <i>John Augustine (NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))</i>	16
14:15 - 14:30	The Hazy Space Between Cloud and Aerosol <i>Chuck Long (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	17
14:30 - 14:45	Two Centuries of Volcanic Aerosols Derived from Lunar Eclipse Records, 1805-2015 <i>Richard A. Keen (University of Colorado, Emeritus, Department of Atmospheric and Oceanic Sciences)</i>	18
14:45 - 15:15	Afternoon Break	
Session 4	Carbon Cycle & Greenhouse Gases - Isotopes — Chaired by Arlyn Andrews	
15:15 - 15:30	Detecting Trends in Fossil Fuel Emissions with $^{14}\text{CO}_2$ in the Presence of Transport Errors and Biased Inventories <i>Sourish Basu (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	19
15:30 - 15:45	Optical Detection of Radiocarbon (^{14}C) Below Modern Levels by Cavity Ring-down Spectroscopy <i>Adam J. Fleisher (National Institute of Standards and Technology (NIST))</i>	20
15:45 - 16:00	Unexpected and Significant Biospheric CO_2 Fluxes in the Los Angeles Basin Indicated by Atmospheric Radiocarbon ($^{14}\text{CO}_2$) <i>John B. Miller (NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))</i>	21
16:00 - 16:15	Constraining Biospheric Exchange Processes Over North America by Joint Assimilation of Atmospheric CO_2 and $\delta^{13}\text{C}$ <i>Ivar R. van der Velde (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	22
16:15 - 16:30	Gaseous Reference Materials to Underpin Measurements of Amount Fraction and Isotopic Composition of Greenhouse Gases <i>Paul Brewer (National Physical Laboratory, Teddington, United Kingdom)</i>	23
16:30 - 16:45	Calibration Strategies for FTIR and Other IRIS Instruments for Accurate $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ Measurements of CO_2 in Air <i>Joële Viallon (Bureau International des Poids et Mesures (BIPM), Sèvres, France)</i>	24
17:00 - 20:00	Poster Session (DSRC Cafeteria) with appetizers and refreshments	

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07:00	Registration Opens in GC-402 - lunch orders collected at registration table	
07:30 - 08:00	Morning Snacks - coffee, tea, fruit, bagels and donuts served	
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Session 5	Carbon Cycle & Greenhouse Gases - Methane & Carbon Monoxide — Chaired by John B. Miller	
08:00 - 08:15	Model Simulations of Atmospheric Methane and Their Evaluation Using AGAGE/NOAA Surface and IAGOS-CARIBIC Airborne Observations, 1997-2014 <i>Carl Brenninkmeijer (Max Planck Institute (MPI) for Chemistry, Atmospheric Chemistry Division, Mainz, Germany)</i>	25
08:15 - 08:30	Little Evidence for Significant Increases of CH ₄ Emission in the U.S. Over the Past Decade <i>Xin Lan (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	26
08:30 - 08:45	Using Observations to Understand Regional Methane Budgets <i>Neil Harris (Cranfield University, Cranfield, United Kingdom)</i>	27
08:45 - 09:00	Separation of Methane Emissions from Biogenic Sources and Natural Gas Based on CH ₄ , C ₂ H ₆ and NH ₃ Column Observations in the Colorado Front Range <i>Natalie Kille (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	28
09:00 - 09:15	Dual Frequency Comb Measurements of Greenhouse Gases Over Boulder <i>Eleanor Waxman (National Institute of Standards and Technology (NIST))</i>	29
09:15 - 09:30	Improved Mechanistic Understanding of Natural Gas Methane Emissions from Spatially Resolved Aircraft Measurements <i>Stefan Schwietzke (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	30
9:30 - 10:00	Morning Break	
Session 6	Ozone, Water Vapor & Aerosols — Chaired by Irina Petropavlovskikh & Patrick Sheridan	
10:00 - 10:15	Rapid Desiccation of the Stratosphere in 2016: Connection to an Anomalous Change in the QBO <i>Dale F. Hurst (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	31
10:15 - 10:30	Stratospheric Ozone at South Pole Begins to Show Signs of Improvement in the Yearly Ozone Hole <i>Bryan J. Johnson (NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))</i>	32
10:30 - 10:45	Out of the SHADOZ: Impacts and Uncertainties of Ozonesonde Reprocessing <i>Jacquelyn Witte (Science Systems and Applications, Inc. (SSAI))</i>	33
10:45 - 11:00	Global Ozone Trends: First Results from the Tropospheric Ozone Assessment Report (TOAR) <i>Audrey Gaudel (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	34
11:00 - 11:15	Surface Ozone in the Northern Front Range and the Influence of Oil and Gas Development on Ozone Production During FRAPPÉ/DISCOVER-AQ <i>Lucy Cheadle (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	35
11:15 - 11:30	Impacts of Increasing Aridity and Wildfires on Aerosol Loading in the Intermountain Western U.S. <i>A. Gannet Hallar (University of Utah)</i>	36
11:30 - 11:45	Measurements of the Boundary Layer at Mauna Loa Observatory, Hawaii <i>John Barnes (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	37
11:45 - 12:00	Ground-based and Aircraft Observations of Greenhouse Gases, Aerosols, and Other Trace Species Carried Out in Siberia, Russia <i>Mikhail Arshinov (V.E. Zuev Institute of Atmospheric Optics, Siberian Branch, Russian Academy of Science (IAO SB RAS), Tomsk, Russia)</i>	38
12:00 - 13:00	Catered Lunch - Outreach Classroom GB-124 (pre-payment of \$12.00 at registration)	

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Session 7	Halocarbons & Other Trace Gases — Chaired by James W. Elkins	
13:00 - 13:15	The Continued Slowdown in the Decline of Atmospheric CFC-11 <i>Stephen A. Montzka (NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))</i>	39
13:15 - 13:30	Possible Influences of Stratospheric Transport Variability on Emission Estimates of Long-lived Trace Gases <i>Eric Ray (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	40
13:30 - 13:45	Variability in Inter-hemispheric Exchange Inferred from Tropospheric Measurements of SF ₆ <i>Brad D. Hall (NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))</i>	41
13:45 - 14:00	On the Emissions of HCFCs and CFCs Potentially Related to HFC Production <i>Martin K. Vollmer (Swiss Federal Laboratories for Materials Science and Technology, Empa, Dübendorf, Switzerland)</i>	42
14:00 - 14:15	European Emissions of the Powerful Greenhouse Gases Hydrofluorocarbons Inferred from Atmospheric Measurements and Their Comparison with Annual National Reports to UNFCCC <i>Michela Maione (University of Urbino, Department of Basic Sciences and Foundations, Urbino, Italy)</i>	43
14:15 - 14:30	Establishing Regular Measurements of Halocarbons at Taunus Observatory <i>Tanja Schuck (Goethe University, Institute for Atmospheric and Environmental Sciences, Frankfurt, Germany)</i>	44
14:30 - 15:00	Afternoon Break	
Session 8	Carbon Cycle & Greenhouse Gases - Remote Sensing — Chaired by Sourish Basu	
15:00 - 15:15	What Have We Learned About the Carbon Cycle from GOSAT and OCO-2? <i>David F. Baker (Cooperative Institute for Research in the Atmosphere (CIRA), Colorado State University)</i>	45
15:15 - 15:30	Assimilating NASA's Atmospheric Composition Observations in the GEOS Earth System Model <i>Steven Pawson (NASA Goddard Space Flight Center (GSFC))</i>	46
15:30 - 15:45	Using GEOS-5 Aerosols to Inform the OCO-2 CO ₂ Retrieval <i>Robert R. Nelson (Colorado State University, Department of Atmospheric Science)</i>	47
15:45 - 16:00	Amazonian GPP Estimated from Satellite-observed Carbonyl Sulfide Mixing Ratios <i>Timothy W. Hilton (University of California at Merced)</i>	48
16:00 - 16:15	Five-year Survey of the U.S. Natural Gas Flaring Observed from Space with VIIRS <i>Mikhail Zhizhin (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)</i>	49
16:15 - 16:30	Analysis on the Spatiotemporal Distribution of OCO-2 XCO ₂ Over South Korea <i>Gawon Kim (National Institute of Meteorological Sciences, Seogwipo-si, South Korea)</i>	50
16:30 - 16:45	An Update on OCO-2 at the End of Prime Mission <i>Christopher W. O'Dell (Cooperative Institute for Research in the Atmosphere (CIRA), Colorado State University)</i>	51
16:45	Closing Remarks - Dr. James Butler, Director (NOAA/ESRL Global Monitoring Division)	

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Arctic Monitoring

- P-1 ARM North Slope of Alaska Facilities: Unmanned Aerial Systems and Tethered Balloon Operations
Jasper Hardesty (Sandia National Laboratories)
- P-2 Seasonal Cycles of Aerosol Properties Across the North Slope of Alaska: Sources and Distributions from Utqiagvik (formerly Barrow) to Oliktok Point
Allison McComiskey (NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))
- P-3 Observations of the Surface Radiation Budget and Cloud Radiative Forcing From Pan-Arctic Land Stations
Christopher J. Cox (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-4 Asian Transport Influence on Greenland Crustal Aerosols
Nicholas Spada (University of California at Davis)
- P-5 Understanding the Impact of Biomass Burning on Ozone Conditions in the Arctic
Audra McClure-Begley (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-6 Analysis of Near-surface Permafrost Monitoring Station Data from Alaska
Kang Wang (Institute of Arctic and Alpine Research (INSTAAR), University of Colorado)

Aerosols

- P-7 A Comparison of Photodiode and LED Based Sunphotometer-derived AOD with NASA AERONET
Ian Krintz (Appalachian State University, Department of Physics and Astronomy)
- P-8 Volatility of Materials Internally Mixed with Black Carbon from Biomass Burning
Kara Lamb (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-9 Ambient Aerosol Extinction in Great Smoky Mountains National Park
Tim Gordon (Handix Scientific)
- P-10 Characterization of Transported Biomass-Burning Smoke from Indochina to Mt. Lulin Based on a Super Event in March of 2009
Sheng-Hsiang Carlo Wang (National Central University, Department of Atmospheric Sciences, Chung-Li, Taiwan)
- P-11 Aerosol Measurements Over Mauna Loa Observatory
Nimmi C. P. Sharma (Central Connecticut State University, Department of Physics and Engineering Physics)

Carbon Cycle & Greenhouse Gases - Methane & Carbon Monoxide

- P-12 Calibration and Field Testing of Cavity Ring-down Laser Spectrometers Measuring Methane Mole Fraction and the Isotopic Ratio of Methane, Deployed on Towers in the Marcellus Shale Region
Natasha Miles (The Pennsylvania State University, Department of Meteorology)
- P-13 Methane Source Attribution in the DJ Basin Using Mobile Surveys and Computational Analytics
Emmaline Atherton (St. Francis Xavier University, Antigonish, Canada)
- P-14 Temporal Variability in Methane at Indianapolis with Implications for the Urban Methane Flux Estimates
Nikolay Balashov (The Pennsylvania State University, Department of Meteorology)
- P-15 Stable Isotopes of Carbon Monoxide During Two Summers at Indianapolis, IN Show Significant Influence of Oxidized Biogenic Volatile Organic Compounds on the CO Budget
Isaac Vimont (Institute of Arctic and Alpine Research (INSTAAR), University of Colorado)
- P-16 Chemical Feedback from Decreasing Carbon Monoxide Emissions
Benjamin Gaubert (National Center for Atmospheric Research (NCAR), Atmospheric Chemistry Observations and Modeling Laboratory)

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Carbon Cycle & Greenhouse Gases - Measurements & Networks

- P-17 NOAA GMD'S Global Greenhouse Gas Reference Network Management, Logistics, and Importance
Eric Moglia (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-18 NOAA Flask Measurements of Greenhouse and Trace Gases During the ACT-America Campaign
Bianca Baier (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-19 Application of Observations from the Summer 2016 ACT-America Campaign to Constrain Modeled Regional CO₂ Concentrations and Fluxes
Brian Gaudet (The Pennsylvania State University, Department of Meteorology)
- P-20 Comparing Atmospheric CO₂ Measurements from Two Instruments at Baring Head, New Zealand
Sylvia Nichol (National Institute of Water and Atmospheric Research (NIWA), Wellington, New Zealand)
- P-21 Introduction of the NIMS Activities on a Carbon Cycle Study
Tae-Young Goo (National Institute of Meteorological Sciences, Seogwipo-si, South Korea)
- P-22 A Study of Diurnal and Seasonal Variations of Carbon Dioxide and Methane in the Eastern Highland Rim Region of Tennessee
Wilson K Gichuhi (Tennessee Technological University)
- P-23 Can We Detect the Conversion of the Harding Street Power Plant in Indianapolis from Coal to Natural Gas Using Tower-based CO₂ Mole Fraction Data Alone?
Nikolay Balashov (The Pennsylvania State University, Department of Meteorology)

Carbon Cycle & Greenhouse Gases - Modeling & Emissions

- P-24 The Role of Horizontal Grid Spacing on Transport and Mixing of Passive Tracers Over Complex Terrain
Gert-Jan Duine (University of Virginia)
- P-25 Evaluation of the Carbon Cycle in the CMIP5 Earth System Model ESM2G
Mark Leonard (Science and Technology Corporation)
- P-26 The Estimation of CO₂ Fluxes with a Coupled Meteorological and Tracer Transport Model
Vikram Khade (University of Toronto, Department of Physics, Toronto, Canada)
- P-27 Towards a Novel Integrated Approach for Estimating Greenhouse Gas Emissions in Support of International Agreements
Stefan Reimann (Swiss Federal Laboratories for Materials Science and Technology, Empa, Dübendorf, Switzerland)
- P-28 Quantification of NO_y and CO Emissions from Washington, D.C.-Baltimore During the WINTER Campaign
Olivia E. Salmon (Purdue University, Department of Chemistry)
- P-29 Analysis of Long-term Observations of NO_x and CO in Megacities and Application to Constraining Emissions Inventories
Gregory Frost (NOAA Earth System Research Laboratory, Chemical Sciences Division (CSD))
- P-30 Increased Propane Emissions from the United States
Lei Hu (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-31 A Ten-Year (2006-2016) Record of Non-methane Hydrocarbons (NMHCs) in the Subtropical Marine Boundary Layer at the Cape Verde Atmospheric Observatory
Shalini Punjabi (University of York, Department of Chemistry, Wolfson Atmospheric Chemistry Laboratories (WACL), York, United Kingdom)
- P-32 Remote Tropical Island Mountaintop Measurements of Halogen Radicals and OVOCs
Theodore Koenig (University of Colorado, Department of Chemistry and Biochemistry)
- P-33 VOC Measurements Using Whole Air Sampling (WAS) During ATom-1
Isobel J Simpson (University of California at Irvine, Department of Chemistry)

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Halocarbons

- P-34 First Results of Tall Tower Surface-atmosphere N₂O Flux Measurements Over a Mixed Agricultural Region in Central Europe
László Haszpra (Hungarian Meteorological Service, Budapest, Hungary)
- P-35 The WMO-GAW-VOC Network with Contributions of AGAGE
Rainer Steinbrecher (Institute for Meteorology and Climate Research, Karlsruhe Institute of Technology, Campus Alpin, Karlsruhe, Germany)
- P-36 Twenty-Five Years of Airborne Observations of Ozone-Depleting and Climate-Related Gases in the Upper Troposphere and Lower Stratosphere
James W. Elkins (NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))
- P-37 Sulfuryl Fluoride (SO₂F₂) Atmospheric Abundance and Trend from the GMD North American Tower and Aircraft Programs
Benjamin R. Miller (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-38 Perfluoro-N-methylmorpholine (C₅F₁₁NO), a Persistent Greenhouse Gas: Laboratory Determination of Radiative Efficiency, Atmospheric Loss Processes and Global Warming Potential
François Bernard (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)

Instrumentation - Lab & Field

- P-39 Development of Traceable Precision Dynamic Dilution Method to Generate Dimethyl Sulphide Gas Mixtures at Sub-nmol/mol for Ambient Measurement
Sangil Lee (Korea Research Institute of Standards and Science, Center of Gas Analysis, Daejeon, South Korea)
- P-40 Pressure Dependent CO₂ Enrichment in High-pressure Aluminum Cylinders
Michael F. Schibig (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-41 Ensuring High-quality Data from NOAA'S GC-MS Perseus Instrument
Molly J. Crotwell (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-42 High-precision, Continuous and Real-time Measurement of Atmospheric Oxygen Using Cavity Ring-down Spectroscopy
Jennifer Boulton (Picarro Inc.)
- P-43 Continuous, Regional Approach to Methane Source Detection and Sizing Using Dual Frequency Comb Laser Spectroscopy and Atmospheric Inversions
Caroline Alden (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-44 2017 Cooperative Tower Network Overview and Insights
Jonathan Kofler (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-45 Improvements to UCATS for the Atmospheric Tomography (ATom) Mission and Recent Results
Eric J. Hints (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-46 Recent Methodological Advancements to the AirCore Atmospheric Profiler
Jonathan Bent (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-47 NOAA Frost Point Hygrometer (FPH) Comparisons, Measurement Uncertainties and Recent Instrument Improvements
Emrys Hall (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)

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Ozone & Water Vapor

- P-48 Homogenizing NOAA's Ozonesonde Data Set Improves Comparison with Satellite-derived Vertical Ozone Profiles
Chance W. Sterling (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-49 SHADOZ (Southern Hemisphere Additional Ozonesondes) Network Report: Updates and Station Activities
Jacquelyn Witte (Science Systems and Applications, Inc. (SSAI))
- P-50 Ozone Vertical Profile Measurements in the Northern Front Range of Colorado in July-August 2014 During FRAPPE and DISCOVER-AQ
Samuel J. Oltmans (Retired from NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))
- P-51 Influence of Stratospheric Intrusions on the Lower Free Tropospheric Ozone at Lulin Atmospheric Background Station
Chang-Feng Ou-Yang (National Central University, Department of Atmospheric Sciences, Chung-Li, Taiwan)
- P-52 Regional Trend Analysis of Surface Ozone Observations from Monitoring Networks in Eastern North America, Europe and East Asia
Kai-Lan Chang (National Research Council Post-Doc)
- P-53 Overview of the Long-term Ozone Trends and Uncertainties in the Stratosphere (LOTUS) SPARC Activity
Irina Petropavlovskikh (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-54 Removal of Seasonal Bias from Dobson Spectrophotometer Records Using Reanalysis
Brandon Noirot (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-55 Comparison of Ozone Retrievals from the Umkehr Reprocessing Version and Satellites
Koji Miyagawa (Guest Scientist at NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))
- P-56 Differences Between the Reprocessed Dobson Total Ozone and Satellite Observation Records
Koji Miyagawa (Guest Scientist at NOAA Earth System Research Laboratory, Global Monitoring Division (GMD))
- P-57 Congregation of Vapors: Towards a Synoptic View of Water Vapor in Support of Airborne IR Astronomy
Jeffrey Van Cleve (SETI Institute)

Radiation

- P-58 A New Data Product for the NOAA Environmental UV-ozone Brewer Network (NEUBrew) Aerosol Optical Depth in the UV Spectral Region
Patrick Disterhoft (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-59 Significant Improvements in Pyranometer Nighttime Offsets Using High-Flow, DC Ventilation
Mark C. Kutchenteiter (National Renewable Energy Laboratory (NREL))
- P-60 Analysis of Solar Radiation Measurements at BSRN Lulin Candidate Station
Nai-Ju Hsueh (National Central University, Department of Atmospheric Sciences, Chung-Li, Taiwan)

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Partner Stations & Meteorology

- P-61 A Length-Scale Analysis of Variance for Many Constituents from Aircraft, Satellite and Model Results During the 2013 SENEX Field Study
Stuart McKeen (Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado)
- P-62 Continuous Long-term Monitoring of Atmospheric Key Species at the GAW Global Station Hohenpeissenberg
Dagmar Kubistin (Meteorological Observatory Hohenpeissenberg, German Meteorological Service, Hohenpeissenberg, Germany)
- P-63 Long-term Measurements from the GAW Cape Verde Atmospheric Observatory (CVAO)
J.R. Hopkins (University of York, National Centre for Atmospheric Science (NCAS), York, United Kingdom)
- P-64 Lanyu (Island) Station – New Horizons of the Western Pacific Ocean in Background Atmospheric Chemistry and Radiation Observations
Kun-Wei Lin (Central Weather Bureau, Observation Division, Taipei, Taiwan)
- P-65 Variability in the Onset of Summer Monsoon Over Vietnam
Nguyen Thi Lan Anh (Hanoi University of Natural Resources and Environment (HUNRE), Hanoi, Vietnam)
- P-66 Variability and Trends of Withdraw for the Summer Monsoon Over Vietnam
Phung Thi My Linh (Hanoi University of Natural Resources and Environment (HUNRE), Hanoi, Vietnam)
- P-67 Projections of Variability and Trends of Summer Monsoon Rainfall Over Vietnam
Nguyen Dang Mau (Vietnam Institute of Meteorology, Hydrology and Climate Change, Hanoi, Vietnam)
- P-68 Study of the Diurnal Cycle of Microphysical Properties of Clouds in the Amazon Basin Using GOES Measurements
André Cezar Pugliesi da Silva (Institute of Physics, University of São Paulo, São Paulo, Brazil)

Notes:
