

[POSTER 3]

Date / Time (Tue.) October 5, 2021 / 14:00-15:00 (UTC)

Session Code TUE3

Session Chair Matt Tully, Karin Kreher, Steve Montzka

[TUE3_1] 14:00-14:02

The MIPAS Climatology of Bromine Nitrate (BrONO₂) in Comparison to Atmospheric Modelling

Michael Höpfner, Oliver Kirner, Gerald Wetzell, Björn-Martin Sinnhuber, Florian Haenel, Johannes Orphal, Roland Ruhnke, Gabriele Stiller, and Thomas von Clarmann

Karlsruhe Institute of Technology, Germany

[TUE3_2] 14:02-14:04

Multiyear Study of OClO in the Austral Low Stratosphere as Observed from the Belgrano (78° S) and Marambio (64° S) NDACC Sites

Cristina Prados-Roman¹, Gaia Pinaridi², José Antonio Adame¹, Olga Puentedura¹, Mónica Navarro Comas¹, Laura Gómez-Martín¹, Héctor Ochoa³, Michel Van Roozendael², and Margarita Yela¹

¹National Institute for Aerospace Technology, Spain, ²BIRA-IASB, Belgium, ³Argentinian Antarctic Institute, Argentina

[TUE3_3] 14:04-14:06

The Chemical Impact of Extreme Solar Events in the Middle Atmosphere

Thomas Reddmann¹, Monali Borthakur¹, Miriam Sinnhuber¹, Ilya Usoskin², and Jan-Maik Wissing³

¹Karlsruhe Institute of Technology, Germany, ²University of Oulu, Finland, ³University of Rostock, Germany

[TUE3_4] 14:06-14:08

Exploring Short-Term Variations in Mesospheric Ozone due to Large-Scale Solar Flares using a Ground-Based Millimeter-Wave Radiometer at Rikubestu, Japan and Aura/MLS Ozone Measurements

Tomoo Nagahama, Akira Mizuno, Taku Nakajima, and Tianliang Yang

Nagoya University, Japan

[TUE3_5] 14:08-14:10

Revising 11-Year Solar Cycle Signal in the Stratospheric Ozone using MLS and SORCE Satellite Measurements

Sandip Dhomse¹, Martyn Chipperfield¹, Wuhu Feng¹, and Ryan Hossaini²

¹University of Leeds, UK, ²University of Lancaster, UK

[TUE3_6] 14:10-14:12

Investigating the Ozone-Climate Feedback of Geomagnetic Forcing using ICON-ART-LINOZ

Maryam Ramezani Ziarani, Thomas Reddmann, Katerina Kusakova, and Miriam Sinnhuber

Karlsruhe Institute of Technology, Germany

V. Program Schedule

[TUE3_7] 14:12-14:14

The Stability and Homogeneity of Long-Term Satellite and Ground-Based Stratospheric Ozone Profile Data Records

Daan Hubert¹, Tijl Verhoelst¹, Arno Keppens¹, Steven Compernelle¹, Carlo Arosio², Viktoria Sofieva³, and Jean-Christopher Lambert¹

¹BIRA-IASB, Belgium, ²University of Bremen, Germany, ³Finnish Meteorological Institute, Finland

[TUE3_8] 14:14-14:16

Analysis of Vertical Ozone Profiles by the SABER Satellite and SHADOZ: Comparison of the Last 17 Years between Subtropical and Tropical Latitudes

Gabriela Dornelles Bittencourt^{1,2}, Damaris Kirsch Pinheiro¹, Hassan Bencherif², Nelson Bègue², Lucas Vaz Peres³, Francisco Raimundo da Silva⁴, and Maria Paulete Pereira Martins⁴

¹UFSM, Brazil, ²LACy, France, ³UFOPA, Brazil, ⁴INPE, Brazil

[TUE3_9] 14:16-14:18

Characterization of Total Ozone Column of Two Measuring Stations in the North, and South Hemisphere of America

Gerardo Carbajal Benítez¹ and Héctor R. Estévez Pérez²

¹National Meteorological Service, Argentina, ²UNAM, Mexico

[TUE3_10] 14:18-14:20

Stratospheric Aerosol and Gas Experiment III on the International Space Station (SAGE III/ISS): Validation of Ozone using In-situ Measurements

S. Kizer^{1,2}, M. Roell², D. Flittner², R. Damadeo², C. Roller^{1,2}, D. Hurst^{3,4}, E. Hall^{3,4}, A. Jordan^{3,4}, P. Cullis^{3,4}, B. Johnson⁴, and R. Querel⁵

¹Science Systems and Applications, Inc., USA, ²NASA, USA, ³CIRES, USA, ⁴NOAA, USA, ⁵NIWA, New Zealand

[TUE3_11] 14:20-14:22

The Impact of Continuing CFC-11 Emissions on the Stratosphere

Eric L. Fleming^{1,2}, Qing Liang¹, Luke D. Oman¹, Paul A. Newman¹, Feng Li^{1,3}, and Margaret M. Hurwitz⁴

¹NASA, USA, ²Science Systems and Applications, Inc., USA, ³USRA, USA, ⁴NOAA, USA

[TUE3_12] 14:22-14:24

Technical, Economic, and Policy Impacts to CFC-11 Emissions during the Product Lifecycle in Comparison to Derived Emissions

Helen Walter-Terrinoni¹, Nick Harbeck¹, Stephen A. Montzka², Jose' Pons³, Christina Theodoridi⁴, and Helen Tope⁵

¹AHRI, USA, ²NOAA, USA, ³Sicamu, Inc., USA, ⁴NRDC, USA, ⁵Energy International Australia, Australia

[TUE3_13] 14:24-14:26

Impacts of Space Industry Emissions on Stratospheric Ozone

Christopher Maloney^{1,3}, Martin Ross², Robert Portmann¹, and Karen Rosenlof¹

¹NOAA, USA, ²The Aerospace Corporation, USA, ³University of Colorado, USA

V. Program Schedule

- [TUE3_14]** 14:26-14:28
Potential Impacts of Supersonic Aircraft Emissions on Ozone and Resulting Forcing on Climate
Jun Zhang¹, Donald J. Wuebbles¹, Douglas E. Kinnison², and Steven L Baughcum³
¹University of Illinois at Urbana-Champaign, USA, ²NCAR, USA, ³Boeing Company, USA
- [TUE3_15]** 14:28-14:30
Impact of Unmitigated HFC Emissions on Stratospheric Ozone at the End of the 21st century as Simulated by Chemistry-Climate Models
Eric Dupuy¹, Hideharu Akiyoshi¹, and Yousuke Yamashita^{1,2}
¹National Institute for Environmental Studies, Japan, ²JAMSTEC, Japan
- [TUE3_16]** 14:30-14:32
The Response of Stratospheric Ozone and Dynamics to Changes in Atmospheric Oxygen
Iga Józefiak¹, Timofei Sukhodolov^{2,3,4}, Tatiana Egorova^{2,3}, Eugene Rozanov^{2,3,4}, Gabriel Chiodo^{3,5}, Andrea Stenke³, and Thomas Peter³
¹University of Geneva, Switzerland, ²PMOD/WRC, Switzerland, ³ETH Zurich, Switzerland, ⁴Saint Petersburg State University, Russia, ⁵Columbia University, USA
- [TUE3_17]** 14:32-14:34
Annual Kigali Index (AKI): A Novel Measurement-Based Policy Tool for Checking the Compliance of the Initiated HFC Phase-Down
Stefan Reimann¹, Martin K. Vollmer¹, Stephan Henne¹, Lukas Emmenegger¹, Matt Rigby²
¹EMPA, Switzerland, ²University of Bristol, UK
- [TUE3_18]** 14:34-14:36
Measurements of HFC-23 and HCFC-22 from Ground-based FTIR Spectrometers at Rikubetsu (44°N), Japan and Syowa Station (69°S), Antarctica
Hideaki Nakajima^{1,2}, Masanori Takeda², Isao Murata², Tomoo Nagahama³, Isamu Morino¹, and Geoffrey C. Toon⁴
¹National Institute for Environmental Studies, Japan, ²Tohoku University, Japan, ³CalTech, USA, ⁴(Now) NARO, Japan
- [TUE3_19]** 14:36-14:38
Rising Global Emissions of HCFC-141b Inferred from Atmospheric Measurements
Luke M. Western¹, Sunyoung Park², Alistair J. Manning³, Alison L Redington³, Stephan Henne⁴, Xuekun Fang⁵, Lei Hu^{6,7}, Stephen A. Montzka⁶, Paul J. Fraser⁸, Christina M. Harth¹⁰, Ove Hermansen⁹, Jooil Kim¹⁰, Paul B. Krummel⁸, Lambert Kuijpers¹¹, Chris Lund⁹, Jens Mühle¹⁰, Simon O'Doherty¹, Stefan Reimann⁴, Peter K. Salameh¹⁰, Daniel Say¹, Christina Theodoridi¹², Martin K. Vollmer⁴, Helen Walter-Terrinoni¹³, Dickon Young¹, Ray F. Weiss¹⁰, Ronald G. Prinn¹⁴, and Matthew Rigby¹
¹University of Bristol, UK, ²Kyungpook National University, Republic of Korea, ³Met Office, UK, ⁴EMPA, Switzerland, ⁵Zhejiang University, China, ⁶NOAA, USA, ⁷CIRES, USA, ⁸CSIRO, Australia, ⁹Norwegian Institute for Air Research, Norway, ¹⁰UCSD, USA, ¹¹A/gent Consultancy B.V., The Netherlands, ¹²NRDC, USA, ¹³AHRI, USA, ¹⁴MIT, USA

V. Program Schedule

[TUE3_20] 14:38-14:40

On the Effects of the Ocean on Atmospheric CFCs and HFCs lifetimes and Emissions

Peidong Wang¹, Jeffery R. Scott¹, Susan Solomon¹, John Marshall¹, Andrew R. Babbitt¹, Megan Lickley¹, David W. J. Thompson², Timothy DeVries³, Qing Liang⁴, and Ronald G. Prinn¹

¹MIT, USA, ²Colorado State University, USA, ³UCSB, USA, ⁴NASA, USA

[TUE3_21] 14:40-14:42

Comparison of Inorganic Chlorine in the Southern Hemispheric Lower Stratosphere During Late Winter 2019

Markus Jesswein¹, Heiko Bozem², Hans-Christoph Lachnitt², Peter Hoor², Thomas Wagenhäuser¹, Timo Keber¹, Tanja Schuck¹, and Andreas Engel¹

¹University of Frankfurt, Germany, ²Johannes Gutenberg University of Mainz, Germany

[TUE3_22] 14:42-14:44

Organic, Inorganic and Total Bromine in the Extratropical Tropopause and Lowermost Stratosphere in Fall 2017: Origins, Transport Pathways and Consequences for Ozone

Meike K. Rotermund¹, Vera Bense², Martyn P. Chipperfield³, Andreas Engel⁴, Jens-Uwe Grooß⁵, Peter Hoor², Tilman Hüneke^{1,7}, Timo Keber⁴, Flora Kluge¹, Ben Schreiner¹, Tanja Schuck⁴, Bärbel Vogel⁵, Andreas Zahn⁶, and Klaus Pfeilsticker¹

¹University of Heidelberg, Germany, ²Johannes Gutenberg University Mainz, Germany, ³University of Leeds, UK, ⁴Goethe University Frankfurt, Germany, ⁵Institute of Energy and Climate Research: Stratosphere (IEK-7), Germany, ⁶Karlsruhe Institute of Technology, ⁷(Now) Encavis AG, Germany

[TUE3_23] 14:44-14:46

ENSO-Driven Wildfires Cause Large Variability in the Naturally Emitted, Ozone Depleting Trace Gas Methyl Bromide

Melinda R. Nicewonger¹, Eric S. Saltzman², and Stephen A. Montzka¹

¹NOAA, USA, ²UC Irvine, USA

[TUE3_24] 14:46-14:48

Pollution Trace Gases C₂H₆, C₂H₂, HCOOH, and PAN in the UTLS: Observations and Simulations

Gerald Wetzel¹, Felix Friedl-Vallon¹, Norbert Glatthor¹, Jens-Uwe Grooß², Thomas Gulde¹, Michael Höpfner¹, Sören Johansson¹, Farahnaz Khosrawi¹, Oliver Kirner¹, Anne Kleinert¹, Erik Kretschmer¹, Guido Maucher¹, Hans Nordmeyer¹, Hermann Oelhaf¹, Johannes Orphal¹, Christof Piesch¹, Björn-Martin Sinnhuber¹, Jörn Ungermann², and Bärbel Vogel²

¹Karlsruhe Institute of Technology, Germany, ²Institute of Energy and Climate Research: Stratosphere (IEK-7), Germany

[TUE3_25] 14:48-14:50

Short-Term Variations of HCl and HF Trends Observed with FTIR at Tsukuba and Rikubetsu, Japan

Isao Murata¹, Yoshihiro Tomikawa^{2,3}, Isamu Morino⁴, Hideaki Nakajima⁴, Hideharu Akiyoshi⁴, and Tomoo Nagahama⁵

¹Tohoku University, Japan, ²National Institute of Polar Research, Japan, ³SOKENDAI, Japan, ⁴National Institute for Environmental Studies, Japan, ⁵Nagoya University, Japan

V. Program Schedule

- [TUE3_26]** 14:50-14:52
A Method for Calculating Offsets to Ozone Depletion and Climate Impacts of Unexpected Production of Ozone-Depleting Substances
Gabrielle Dreyfus¹, Stephen A. Montzka², Stephen O. Andersen¹, and Richard (“Tad”) Ferris¹
¹IGSD, USA, ²NOAA, USA
- [TUE3_27]** 14:52-14:54
Revising the Ozone Depletion Potentials Metric for Short-Lived Chemicals
Donald J. Wuebbles¹, Jun Zhang¹, Douglas E. Kinnison², and Alfonso Saiz-Lopez³
¹UIUC, USA, ²NCAR, USA, ³Institute of Physical Chemistry Rocasolano, Spain
- [TUE3_28]** 14:54-14:56
Arctic Ozone Depletion Induced by Solar Proton Events – A Statistic Study based on Satellite Observation and WACCM-D Model
Jia Jia¹, Kenneth Nilsen¹, Niilo Kalakoski², Antti Kero¹, Pekka T. Verronen^{1,2}, and Monika E. Szeląg²
¹University of Oulu, Finland, ²Finnish Meteorological Institute, Finland
- [TUE3_29]** 14:56-14:58
Quantifying Present and Near-Future Rocket Launch Impacts on the Stratosphere
Tyler Brown, Michele T. Bannister, and Laura E. Revell
University of Canterbury, New Zealand