

### ● (Wed.) October 6

#### [ORAL] Session C. Tropospheric Ozone Science

Date / Time (Wed.) October 6, 2021 / 12:00-13:20 (UTC)

Session Code WED1

Session Chair Gangwoong Lee, Lin Zhang

[WED1\_K] 12:00-12:15

Keynote

**Ozone Pollution and Research Program in China: An Overview**

Yuanhang Zhang

Peking University, China

[WED1\_1] 12:15-12:20

**Change in Tropospheric Ozone in the Recent Decades and Its Contribution to Global Total Ozone**

Junhua Liu<sup>1,2</sup>, Sarah A. Strode<sup>1,2</sup>, Qing Liang<sup>2</sup>, Luke D. Oman<sup>2</sup>, Peter R. Colarco<sup>2</sup>, Eric L. Fleming<sup>3,2</sup>, Michael E. Manyin<sup>3,2</sup>, Jerald R. Ziemke<sup>4,2</sup>, and Lok N. Lamsal<sup>1,2</sup>

<sup>1</sup>USRA, USA, <sup>2</sup>NASA, USA, <sup>3</sup>Science Systems and Applications, Inc., USA, <sup>4</sup>Morgan State University, USA

[WED1\_2] 12:20-12:25

**Free Tropospheric Ozone Reductions due to Reduced Emissions in the COVID-19 Pandemic**

W. Steinbrecht<sup>1</sup>, D. Kubistin<sup>1</sup>, C. Plass-Dülmer<sup>1</sup>, J. Davies<sup>2</sup>, D.W. Tarasick<sup>2</sup>, P. v. d. Gathen<sup>3</sup>, H. Deckelmann<sup>3</sup>, N. Jepsen<sup>4</sup>, R. Kivi<sup>5</sup>, N. Lyall<sup>6</sup>, M. Palm<sup>7</sup>, J. Notholt<sup>7</sup>, B. Kois<sup>8</sup>, P. Oelsner<sup>1</sup>, M. Allaart<sup>9</sup>, A. Piters<sup>9</sup>, M. Gill<sup>10</sup>, and R. Van Malderen<sup>12</sup>, A.W. Delcloo<sup>11</sup>, R. Sussmann<sup>12</sup>, E. Mahieu<sup>13</sup>, C. Servais<sup>13</sup>, G. Romanens<sup>14</sup>, R. Stübi<sup>14</sup>, G. Ancellet<sup>15</sup>, S. Godin-Beekmann<sup>15</sup>, S. Yamanouchi<sup>16</sup>, K. Strong<sup>16</sup>, B. Johnson<sup>17</sup>, P. Cullis<sup>17,18</sup>, I. Petropavlovskikh<sup>17,18</sup>, J.W. Hannigan<sup>19</sup>, J.-L. Hernandez<sup>21</sup>, A. Diaz<sup>20</sup>, T. Nakano<sup>21</sup>, F. Chouza<sup>22</sup>, T. Leblanc<sup>22</sup>, C. Torres<sup>20</sup>, O. Garcia<sup>20</sup>, A.N. Röhlings<sup>23</sup>, M. Schneider<sup>23</sup>, T. Blumenstock<sup>23</sup>, M. Tully<sup>24</sup>, C. Paton-Walsh<sup>25</sup>, N. Jones<sup>26</sup>, R. Querel<sup>26</sup>, S. Strahan<sup>22,27</sup>, R.M. Stauffer<sup>22</sup>, A.M. Thompson<sup>22</sup>, A. Inness<sup>28</sup>, R. Engelen<sup>28</sup>, K.-L. Chang<sup>17,18</sup>, O.R. Cooper<sup>17,18</sup>, G.P. Brasseur<sup>19,29</sup>, I. Bouarar<sup>29</sup>, and B. Gaubert<sup>19</sup>

<sup>1</sup>Deutscher Wetterdienst, Germany, <sup>2</sup>Environment and Climate Change Canada, Canada, <sup>3</sup>Alfred Wegener Institute, Germany, <sup>4</sup>Danish Meteorological Institute, Copenhagen, <sup>5</sup>Finnish Meteorological Institute, Sodankylä, <sup>6</sup>British Meteorological Service, Scotland, <sup>7</sup>University of Bremen, Germany, <sup>8</sup>Institute of Meteorology and Water Management, Poland, <sup>9</sup>Royal Netherlands Meteorological Institute, The Netherlands, <sup>10</sup>Met Éireann Forecast, Ireland, <sup>11</sup>Royal Meteorological Institute of Belgium, Belgium, <sup>12</sup>Karlsruhe Institute of Technology, Germany, <sup>13</sup>University of Liège, Belgium, <sup>14</sup>MeteoSwiss, Switzerland, <sup>15</sup>LATMOS, France, <sup>16</sup>University of Toronto, Canada, <sup>17</sup>NOAA, USA, <sup>18</sup>CIRES, USA, <sup>19</sup>NCAR, USA, <sup>20</sup>AEMET, Spain, <sup>21</sup>Meteorological Research Institute, Japan, <sup>22</sup>NASA, USA, <sup>23</sup>Karlsruhe Institute of Technology, Germany, <sup>24</sup>Bureau of Meteorology, Australia, <sup>25</sup>University of Wollongong, Australia, <sup>26</sup>NIWA, New Zealand, <sup>27</sup>USRA, USA, <sup>28</sup>ECMWF, UK, <sup>29</sup>MPI-M, Germany

## V. Program Schedule

- [WED1\_3]** 12:25-12:30  
**Tropospheric Ozone Hourly and Daily Maps Measured from EPIC, OMPS, OMI, and MLS Satellite Instruments: Data Validation, Global Long-Term Trends and NH Ozone Loss in 2020**  
Jerry R. Ziemke, Natalya A. Kramarova, Liang-Kang Huang, David P. Haffner, Krzysztof Wargan, Gordon J. Labow, Stacey. M. Frith, Pawan K. Bhartia, Jay R. Herman, and Richard D. McPeters  
NASA, USA
- [WED1\_4]** 12:30-12:35  
**Geophysical Signatures in the Sentinel-5p TROPOMI Tropospheric Ozone Data Record and Comparison to Ozonesonde, OMI and GOME-2B**  
Daan Hubert<sup>1</sup>, Klaus-Peter Heue<sup>2,3</sup>, Jean-Christopher Lambert<sup>1</sup>, Tijn Verhoelst<sup>1</sup>, Arno Keppens<sup>1</sup>, Steven Compernelle<sup>1</sup>, Angelika Dehn<sup>4</sup>, Debra E. Kollonige<sup>5,6</sup>, Christophe Lerot<sup>1</sup>, Diego Loyola<sup>2</sup>, Fabian Romahn<sup>2</sup>, Anne M. Thompson<sup>6</sup>, Pepijn Veefkind<sup>7</sup>, Claus Zehner<sup>4</sup>, and the SHADOZ ozonesonde station PIs and staff  
<sup>1</sup>BIRA-IASB, Belgium, <sup>2</sup>DLR, Germany, <sup>3</sup>Technische Universität München, Germany, <sup>4</sup>ESA/ESRIN, Italy, <sup>5</sup>Science Systems and Applications, Inc., USA, <sup>6</sup>NASA, USA, <sup>7</sup>KNMI, The Netherlands
- [WED1\_5]** 12:35-12:40  
**Evaluation of Simulated O<sub>3</sub> Production Efficiency During the KORUS-AQ Campaign**  
Yujin J. Oak<sup>1</sup>, Rokjin J. Park<sup>1</sup>, Jason R. Schroeder<sup>2,3</sup>, James H. Crawford<sup>2</sup>, Donald R. Blake<sup>4</sup>, Andrew J. Weinheimer<sup>5</sup>, Jung-Hun Woo<sup>6</sup>, Sang-Woo Kim<sup>1</sup>, Huidong Yeo<sup>1</sup>, Alan Fried<sup>7</sup>, Armin Wisthaler<sup>8,9</sup>, and William H. Brune<sup>10</sup>  
<sup>1</sup>Seoul National University, Republic of Korea, <sup>2</sup>NASA, USA, <sup>3</sup>(Now) CARB, USA, <sup>4</sup>UC Irvine, USA, <sup>5</sup>NCAR, USA, <sup>6</sup>Konkuk University, Republic of Korea, <sup>7</sup>University of Colorado, USA, <sup>8</sup>University of Oslo, Norway, <sup>9</sup>University of Innsbruck, Austria, <sup>10</sup>Penn. State University, USA
- [WED1\_6]** 12:40-12:45  
**The Impact of Los Angeles Basin Pollution and Stratospheric Intrusions on the Surrounding San Gabriel Mountains as Seen by Surface Measurements, Lidar, and Numerical Models**  
Fernando Chouza<sup>1</sup>, Thierry Leblanc<sup>1</sup>, Mark Brewer<sup>1</sup>, Patrick Wang<sup>1</sup>, Sabino Piazzolla<sup>1</sup>, Gabriele Pfister<sup>2</sup>, Rajesh Kumar<sup>2</sup>, Carl Drews<sup>2</sup>, Simone Tilmes<sup>2</sup>, Louisa Emmons<sup>2</sup>, and Matthew Johnson<sup>3</sup>  
<sup>1</sup>CalTech, USA, <sup>2</sup>NCAR, USA, <sup>3</sup>NASA, USA
- [WED1\_7]** 12:45-12:50  
**Contribution of Stratospheric Ozone Intrusion to the Interannual Variation of Tropospheric Ozone in East Asian Monsoon Region**  
Xiaodan Ma<sup>1</sup>, Tianliang Zhao<sup>1</sup>, and Jianping Huang<sup>2</sup>  
<sup>1</sup>NUIST, China, <sup>2</sup>NOAA, USA
- [WED1\_8]** 12:50-12:55  
**Surface Ozone Concentrations in Austria from 1990 – 2019: Evolution and Lessons for the Future**  
Monika Mayer, Stefan Schreier, Christoph Staehle, Christian Schmidt, and Harald E. Rieder  
University of Natural Resources and Life Sciences (BOKU), Austria

## V. Program Schedule

**[WED1\_9]** 12:55-13:00

**Global and Regional Anthropogenic and Natural Emissions for the Modeling of Ozone and Other Tropospheric Compounds**

Antonin Soulie<sup>1</sup>, C. Granier<sup>1,2</sup>, H. Denier van der Gon<sup>3</sup>, J. Kuenen<sup>3</sup>, S. Arellano<sup>4</sup>, S. Darras<sup>5</sup>, J. Doubalova<sup>6</sup>, B. Galle<sup>4</sup>, M. Gauss<sup>7</sup>, M. Guevara<sup>8</sup>, J.P. Jalkanen<sup>9</sup>, C. Lioussé<sup>1</sup>, D. Simpson<sup>7</sup>, and K. Sindelarova<sup>6</sup>

<sup>1</sup>CNRS, France, <sup>2</sup>CIRES, USA, <sup>3</sup>TNO, The Netherlands, <sup>4</sup>Chalmers University, Sweden, <sup>5</sup>CNRS, France, <sup>6</sup>Charles University, Czech Republic, <sup>7</sup>Norwegian Meteorological Institute, Norway, <sup>8</sup>Barcelona Supercomputing Center, Spain, <sup>9</sup>Finnish Meteorological Institute, Finland

**[WED1\_10]** 13:00-13:05

**A Modeling Study on the Roles of Cloud Distribution in Global Ozone Chemistry**

Kengo Sudo<sup>1,2</sup> and Ryoki Matsuda<sup>1</sup>

<sup>1</sup>Nagoya University, Japan, <sup>2</sup>JAMSTEC, Japan

**Q&A** 13:05-13:20