WMO/UNEP Ozone Research Managers of the parties to the Vienna Convention for the Protection of the Ozone Layer
Eleventh Meeting
Montreal, Canada, 8–10 July 2020

Provisional agenda

Wednesday, 8 July

08:00 onwards  Registration

09:00 – 09:50  Opening of the Meeting

• Welcome statement, Petteri Taalas, Secretary General, World Meteorological Organization (WMO)
• Opening statement, Tina Birmpili, Executive Secretary, Ozone Secretariat
• The 2018 Scientific Assessment of ozone depletion and focus areas of the 2022 Scientific Assessment, David Fahey and Bonfils Safari, Co-Chairs of the Scientific Assessment Panel (SAP)
• Overview of the interface between the Scientific Assessment and the Ozone Research Managers (ORM) recommendations, Gerrie Coetzee and Kenneth Jucks, ORM Co-Chairs

09:50 – 09:55  Election of the 11ORM Co-Chairs

09:55 – 10:00  Adoption of the 11ORM agenda

Session 1:  Issues related to the Vienna Convention for the Protection of the Ozone Layer

This session aims at providing an overview of recommendations and decisions from previous meetings as well as updates on the status of the Trust Fund for Research and Systematic Observations.

10:00 – 10:20  Review of the recommendations of the tenth meeting of the Ozone Research Managers, and the resultant decisions of the tenth Conference of the Parties to the Vienna Convention, Gerrie Coetzee and Kenneth Jucks, 10ORM Co-Chairs

10:20 – 10:30  Report of the Advisory Committee of the Vienna Convention Trust Fund on Research and Systematic Observations, A.R. Ravishankara, Advisory Committee Chair

* Re-issued due to change of dates and venue of the meeting.
10:30 – 10:40 The status of the Trust Fund, *Sophia Mylona, Ozone Secretariat*

10:40 – 10:50 The status of activities under the Trust Fund, *Stoyka Netcheva, WMO*

10:50 – 11:00 Questions and answers

11:00 – 11:15 Appointment of discussion leaders and rapporteurs for the various recommendation areas: research areas / topics of interest; systematic observations; gaps in the global coverage of atmospheric monitoring of controlled substances and options to enhance such monitoring; data archiving; capacity building

**Session 2: The state of the ozone layer and factors impacting the speed of its recovery**

*This session aims at summarizing research on the status of the ozone layer, on the surface UV radiation and expected levels in the 21st century, links with climate change and other emerging issues*

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<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter</th>
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<tbody>
<tr>
<td>11:15</td>
<td>Past, current and future states of the ozone layer</td>
<td><em>Wolfgang Steinbrecht, German Meteorological Office (DWD)</em></td>
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<td>11:35</td>
<td>Surface UV Radiation in the 21st century: Environmental effects in response to changes in ozone and climate</td>
<td><em>Janet Bornman, Environmental Effects Assessment Panel (EEAP) co-chair</em></td>
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<td>11:55</td>
<td>Links between stratospheric ozone and climate: ozone-depleting substances and climate gases including very short-lived substances</td>
<td><em>John Pyle, SAP Co-Chair</em></td>
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<td>12:15</td>
<td>Lunch</td>
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<td>13:30</td>
<td>Unexpected emissions of controlled substances</td>
<td><em>Stephen Montzka, National Oceanic and Atmospheric Administration (NOAA)</em></td>
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<tr>
<td>13:50</td>
<td>Potential sources of unexpected emissions of controlled substances</td>
<td><em>Marta Pizano, Technology and Economic Assessment Panel (TEAP) Co-Chair</em></td>
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<td>14:10</td>
<td>Discussion</td>
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**Session 3: International monitoring programmes for ozone and substances controlled by the Montreal Protocol**

*This session aims at taking stock of the current activities in monitoring of ozone, UV radiation, ozone-depleting substances and climate gases*

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<tr>
<th>Time</th>
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<th>Presenter</th>
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<tr>
<td>14:30</td>
<td>Introduction by the President of the International Ozone Commission (IO3C)</td>
<td><em>Sophie Godin-Beekmann</em></td>
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<td>14:50</td>
<td>Environmental agenda in the context of the Science and Innovation Department of WMO</td>
<td><em>Jürg Luterbacher, WMO</em></td>
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<td>15:10</td>
<td>The Advanced Global Atmospheric Gases Experiment (AGAGE)</td>
<td><em>Ray Weiss, Scripps Institution of Oceanography</em></td>
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<td>15:30</td>
<td>The Network for the Detection of Atmospheric Composition Change (NDACC)</td>
<td><em>Martine De Mazière, Royal Belgian Institute for Space Aeronomy (IASB-BIRA)</em></td>
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<td>15:50</td>
<td>EUBrewNet: What you need to know. Status, activities and future development</td>
<td><em>John Rimmer, University of Manchester</em></td>
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<td>16:10</td>
<td>Coffee/tea break</td>
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16:30 – 16:50  International ozonesonde activities, *Anne Thompson, National Aeronautics and Space Administration* (NASA)

16:50 – 17:10  The stratosphere-troposphere processes and their role in climate project of WCRP: The joint SPARC/IO3C/WMO/NDACC initiative on past trends in the vertical distribution of ozone and S12N, and new initiatives Observed Composition Trends and Variability in the Upper Troposphere and Lower Stratosphere such as OCTAV-UTLS and LOTUS, *Neil Harris, Stratosphere-tropospheric Processes And their Role in Climate (SPARC)*

17:10 – 17:30  The Global Climate Observing System (GCOS) Reference Upper-Air Network (GRUAN) and the C3S activities for in-situ observations, *Fabio Madonna, National Research Council of Italy (CNR)*

17:30 – 17:50  The World Ozone and Ultraviolet Radiation Data Centre - Data reporting and archiving, *Tom Kralidis, WOUDC (remotely)*

17:50 – 18:15  Discussion

18:30 – 20:00  Cocktail reception

**Thursday 9 July**

**Session 4: International monitoring programmes: looking ahead**

09:00 – 09:20  Gaps in the global coverage of atmospheric monitoring of controlled substances and options on ways to enhance such monitoring, *A.R. Ravishankara/Paul Newman/Ray Weiss*

09:20 – 09:40  Case-study: the benefit of an AGAGE-type station for addressing the current poor knowledge of non-East Asian CFC-11 emissions, *Ron Prinn, Massachusetts Institute of Technology (MIT)*

09:40 – 10:10  Discussion

**Session 5: Satellite research and monitoring**

*This session aims at taking stock of the current and planned monitoring from space, addressing also vertical profiling of chemicals by satellites.*

10:10 – 10:25  Current and planned monitoring of ozone from space, *Kenneth Jucks, NASA*

10:25 – 10:40  ESA / Copernicus ozone sensors / measurements and future planned missions, *Claus Zehner, European Space Agency / Centre for Earth Observation (ESA/ESRIN)*


10:55 – 11:10  CEOS AC-VC ozone harmonization projects, *Diego Loyola, German Aerospace Centre, (DLR)*

11:10 – 11:30  Discussion
Session 6: National and regional reports on ozone research and monitoring

In this session, region representatives will present the situation of ozone monitoring and research at the regional and national levels, paying attention to gaps, threats, needs and challenges related to research, monitoring, data archiving and capacity-building activities. Representatives are also expected to report how the recommendations of the 10th meeting of the Ozone Research Managers were implemented at the national and regional levels.

11:30 – 11:50 **Region 1:** Africa, Gerrie Coetzee, South African Weather Service (SAWS)

11:50 – 12:10 **Region 2:** Asia, Yousuke Sawa, Japan Meteorological Agency (JMA)

12:10 – 12:30 **Region 3:** South America, Eduardo Luccini, Argentinian National Scientific and Technical Research Council (IFIR-CONICET)

12:30 – 13:45 Lunch

13:45 – 14:35 **Region 4:** North America, Central America, and the Caribbean
- USA, Kenneth Jucks, NASA, and Stephen Montzka, NOAA
- Canada, SumChi Lee, Environment and Climate Change Canada
- Central America, Mexico and the Caribbean, Hector R Estévez Pérez, Geophysics Institute, National Autonomous University of Mexico (IGUM – UNAM)

14:35 – 14:55 **Region 5:** South-West Pacific, Matt Tully, Australian Bureau of Meteorology

14:55 – 15:15 Polar regions
- Antarctica, Jonathan Shanklin, British Antarctic Survey
- Other Activities in Antarctica and in the Arctic, Michael Sparrow, WMO

15:15 – 15:35 Coffee/tea break

15:35 – 16:25 **Region 6:** Europe
- European Union, Vincent-Henri Peuch, European Centre for Medium-Range Weather Forecasts (ECMWF)
- Northern Europe, Nis Jepsen, Danish Meteorological Institute (DMI)
- Western, Central and Eastern Europe, Stefan Reimann, Swiss Federal Laboratories for Materials Science and Technology (EMPA)
- Southern Europe, Alberto Redondas Marrero, Meteorological State Agency, Spain (AEMET)

16:30 – 18:30 Discussion and formation of breakout groups to frame initial recommendations
- Review of research areas / topics of interest,
- Systematic observations of ozone
- Gaps in the global coverage of atmospheric monitoring of controlled substances and options to enhance such monitoring
- Data archiving; and
- Capacity building.

Friday 10 July

Session 7: Discussion on and adoption of recommendations

In this session, short introductory presentations will be given on the draft recommendations arising from the breakout groups, followed by discussion and adoption of the final recommendations.

09:00 – 09:30 **Research areas / topics of interest:** Presentation of initial draft by John Pyle and Irina Petropavlovskikh
- David Fahey, rapporteur
09:30 – 09:45  Questions and answers

09:45 – 10:15  **Systematic observations:** Presentation of initial draft by Stefan Reimann, Sophie Godin-Beekmann
Wolfgang Steinbrecht, rapporteur

10:15 – 10:30 Questions and answers

10:30 – 11:00 **Gaps in the global coverage of atmospheric monitoring of controlled substances and options to enhance such monitoring:** Presentation of initial draft by A.R. Ravishankara, R. Weiss and Paul Newman
Stephen Montzka, rapporteur

11:00 – 11:15 Questions and answers

11:15 – 11:45 **Data archiving and stewardship:** Presentation of initial draft by Martine De Mazière and John Rimmer
SumChi Lee, rapporteur

11:45 – 12:00 Questions and answers

12:00 – 12:30 **Capacity building:** Presentation of initial draft by Matt Tully and Stoyka Netcheva
Anne Thompson, rapporteur

12:30 – 12:45 Questions and answers

12:45 – 14:00 Lunch

14:00 – 14:30 Thoughts on future meetings of Ozone Research Managers

14:30 – 17:00 Discussion and adoption of the recommendations

17:00 – 17:30 Other matters

17:30 Closure of the meeting

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**Glossary**

**AIUS:** Atmospheric Infrared Ultraspectral Sounder  
**CEOS AC-VC:** Committee on Earth Observation Satellites, Atmospheric Composition Virtual Constellation

**C3S:** Copernicus Climate Change Service

**EUBrewNet:** European Brewer Network

**GRUAN:** GCOS Reference Upper-Air Network

**IGACO-O3:** Integrated Global Atmospheric Chemistry Observations - Ozone

**LOTUS:** Long-Term Ozone Trends and Uncertainties in the Stratosphere

**OCTAV-UTLS:** Observing Composition Trends and Variability in the Upper Troposphere/Lower Stratosphere

**SPN:** SPARC/IO3C/IGACO-O3/NDACC initiative on past trends of the vertical distribution of ozone

**WCRP:** World Climate Research Programme