



International Association of Meteorology and Atmospheric Sciences (IAMAS)

International Ozone Commission (IO₃C)

President
Professor Christos Zerefos
Tel: +30 10 7274133
Fax: +30 10 7274157
e-mail: zerefos@geol.uoa.gr

Secretary
Dr. Sophie Godin- Beekmann
Tel: +33 1 44 27 47 67
Fax: +33 1 44 27 37 76
e-mail: sophie.godin@aero.jussieu.fr

Vice President
Dr. Richard S. Stolarski
Tel: +1 301 614 59 82
Fax: +1 301 614 59 03
e-mail: Richard.S.Stolarski@nasa.gov

Press Release

More than twenty years after the signing of the Montreal protocol, the ozone layer has stabilized but large Antarctic ozone hole continues to occur

The United Nations declared the 16th of September as the International Day for the Protection of the Ozone Layer to commemorate the 16th of September 1987, the date when the Montreal Protocol was signed. The Protocol controls the production and use of ozone depleting substances. It is an example of a successful cooperation between scientists and industry as well as between developed and developing countries and provides an excellent paradigm to the international community for cooperation on complex environmental issues of global importance.

The theme of the International Day for the Preservation of the Ozone Layer on **16 September 2008** is: **“Montreal Protocol – Global partnership for global benefits”¹**.

The Montreal protocol has been a major success for reducing the emissions and atmospheric abundances of most ozone depleting substances. Ground-based and space-based measurements show that the stratospheric loadings of chlorine and bromine, the harmful species harmful to the ozone layer, are in slow decline. Scientific estimates show that continued worldwide compliance with the Montreal Protocol will cause the ozone layer to recover during the 21st century.

Ozone abundances in the extra-polar regions, between 60°S and 60°N, have stabilized with average annual values approximately 3% below pre-1980 levels in the Northern Hemisphere and 6% in the Southern Hemisphere

However, large Antarctic ozone holes continue to occur. In 2007, the area of the ozone hole reached 22 million km² (the continent of Europe has a surface area of 10.2 million km²). In the beginning of September 2008, the ozone hole area reached 25 million km². The variability of the ozone hole area in the recent years is due to the year-to-year variability of dynamical processes affecting the ozone layer. This variability is likely to delay the detection of the onset of ozone recovery over Antarctica. Antarctic ozone is expected to remain low through the next decade.

Arctic ozone depletion also remains large. In three of the last four Arctic winters, ozone losses reached about 20%. Large ozone losses will likely continue to occur in cold Arctic

¹ Please visit the web site of the Ozone Secretariat for the Vienna Convention at the following specific address where you will find suggestions for worldwide activities on the 2008 International Ozone Day.

winters during the next two decades. However, Arctic ozone also exhibits very large year-to-year variability, driven by meteorological conditions that will mask any signal of recovery.

In polar and sub-polar regions, high UV-B irradiances lasting for a few days have been observed. In high southern latitudes, these high UV-B events are associated with polar ozone depletion. At some stations in unpolluted locations, long-term measurements indicate that UV-B radiation levels have been decreasing over the last decade, in accordance with observed ozone increases. However, at some Northern Hemisphere stations UV-B irradiances are still increasing. This increase could be linked to long-term changes in atmospheric aerosol and cloud cover.

Recovery of the ozone layer is expected to occur around the middle of the 21st century as a result of the decrease of ozone depleting substances. However, future increases in greenhouse gases concentrations in the atmosphere will affect the ozone layer. In addition, future ozone changes will also affect climate, particularly in the Southern hemisphere. Recent results have emphasized the importance of stratospheric ozone recovery for predicting Antarctic surface climate change.

The International Ozone Commission (IO₃C) of IAMAS-IUGG **urges all national and international Agencies**, which support scientific research and monitoring of ozone and related parameters to continue supporting these activities.

In particular, the list of planned satellite observing systems from 2008 onward shows that the world's capability for measuring profiles of ozone and trace gases that affect ozone will end at about 2015. These profiles characterize ozone and trace gas changes in the critical altitude regions near the boundary between the troposphere and stratosphere as well as the upper stratosphere. These measurements also overlap with those required for climate data records. The lack of such measurements will hinder the ability of the scientific community to assess the success of the Montreal Protocol with respect to the recovery of the ozone layer.

The International Ozone Commission recommends that new satellite observations of high vertical resolution profiles be implemented in order to more accurately understand the changes in O₃ as ozone-destroying substances decline and climate change occurs. Critical profile measurements include ozone, molecules related to ozone destruction such as chlorofluorocarbons, and climate-related trace gases such as methane, nitrous oxide and water vapour.

This text has been reviewed by the IO₃C members last on September 12th

For more information: Dr. Sophie Godin-Beekmann, Secretary of the International Ozone Commission, University Pierre et Marie Curie, Service d'Aéronomie, Centre National de la Recherche Scientifique 75252, Paris, Cedex 05, France, Tel.: +33 1 44 27 47 67, Fax: +33 1 44 27 49 67, mobile: +33 6 77 18 38 64, e-mail: sophie.godin@aero.jussieu.fr.

IO3C: <http://ioc.atmos.uiuc.edu>,

WMO Northern Hemisphere Ozone Mapping Center: <http://lap.physics.auth.gr/ozonemaps>

WMO Antarctic Ozone Bulletin: <http://www.wmo.ch/web/arep/ozone.html>,

European Ozone Coordinating Unit: <http://www.ozone-sec.ch.cam.ac.uk/>,

World Ozone and Ultraviolet Data Center: <http://www.woudc.org>

Ozone Hole Watch: <http://ozonewatch.gsfc.nasa.gov/>