



1st Announcement

14th WMO/IAEA Meeting of Experts on Carbon Dioxide, Other Greenhouse Gases, and Related Tracer Measurement Techniques
10 –13, September 2007

Finnish Meteorological Institute, Helsinki, Finland



The 1st meeting of the Experts on Carbon Dioxide (CO₂) Measurements was held 32 years ago in La Jolla, California. Since then, there have been regular meetings attended by leaders of the many national CO₂ research programs. The objectives of these meetings are to promote standardization and quality assurance, and to offer an international forum for discussing recent developments, improvements, and problems in the measurement field. The World Meteorological Organization (WMO) has sponsored all CO₂ Experts meetings, including the last held in the US by NOAA, in September 2005. This 14th meeting will be hosted by the Finnish Meteorological Institute. The WMO Global Atmosphere Watch (GAW) programme, through its Scientific Advisory Group for Greenhouse Gases (SAG-GHG), member operated calibration and quality assurance facilities, and the World Data Centre for Greenhouse Gases, helps to coordinate the global network, promotes data quality objectives, and provides data management and links to users. The SAG-GHG members will attend the 14th meeting and meet on 14 September. Because of extensive use of carbon isotopes in studying the carbon cycle, the International Atomic Energy Agency (IAEA) in Vienna became a co-sponsor with WMO in September 1997. Most carbon cycle observation programmes measure not only CO₂ but other greenhouse gases. In recent meetings, these observations have also been addressed.

Measurements of mixing ratios and isotopic composition of CO₂, CH₄ and other greenhouse gases are now made at over 100 globally distributed ground-based sampling locations as well as on ships and aircraft. About 17 laboratories from 12 nations are measuring and reporting CO₂ data. They are assisted by personnel at GAW stations in WMO member countries around the world. On the basis of this network the first WMO Greenhouse Gas Bulletin was released in March 2006 (available on the GAW website http://www.wmo.ch/web/arep/gaw/gaw_home.html). In October 2005, the Global Climate Observing System (GCOS) approved the WMO-GAW Global Atmospheric CO₂ and CH₄ Monitoring Network as a "Comprehensive Network of GCOS".

Observations are essential in understanding global and regional carbon budgets and cycles. Inverse modeling techniques use carbon cycle models and the observed spatial/temporal distribution of greenhouse gases to derive estimates of the magnitude and distribution of the sources and sinks of these gases. Although model transport contributes the largest uncertainties to estimates of sources and sinks, there are still uncertainties associated with inconsistencies in global observations. At the 12th meeting in Toronto, data quality objectives were established for CO₂, CH₄, N₂O and appropriate isotopes (see recommendations on the GAW website http://www.wmo.ch/web/arep/gaw/gaw_home.html). These were slightly modified at the 13th meeting in Boulder.

The 14th meeting will review current WMO data quality objectives. It will be "issue oriented" covering such topics as CO₂, stable isotopes, radiocarbon in CO₂, O₂/N₂, CH₄, N₂O, CO, and H₂ measurements, calibration, quality control, data management, and archiving. New and emerging technology will also be discussed including measurements from satellites and flux tower studies. A final session on the 13th September will discuss how to best integrate and apply global greenhouse gas observations to address the needs of the users of this important Global Earth Observation (GEO) system.

Participants are expected to openly exchange information and consider including in their presentation a "self evaluation" of the quality of their data and, if needed, plans for improving the data quality in view of the WMO measurement recommendations. A short written report of 3 to 5 pages with bibliography will also be required for inclusion in the Meeting Report together with workshop recommendations. The Meeting Report will be published by WMO and posted on the GAW website.

Further information regarding topics, participation, and accommodation will be forthcoming from the organizers Yrjö Viisanen (yrjo.viisanen@fmi.fi), Tuomas Laurila (tuomas.laurila@fmi.fi). **Participants are asked to register their intention to participate, and, if necessary, their need for travel support, by completing the pre-registration form on the meeting website (http://www.fmi.fi/research_climate/climate_6.html) by January 15, 2007.**

Potential sponsors of student and developing country scientists are asked to join WMO, IAEA and FMI by contacting us (organizers at FMI or WMO Len Barrie (lbarrie@wmo.int)). FMI will offer opportunities to visit research and monitoring observatories in the country (details are provided on the website).

