REPORT OF THE WCC-N_2O

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The World Calibration Centre for N_2O (WCC-N_2O) has been established as a central GAW facility according to requirements of the GAW Strategic Plan 2001–2007 (WMO/GAW Report No. 142). Its overall goal is the improvement of N_2O data quality and comparability. The WCC-N_2O (http://imk.fzk.de/wcc-n2o/) is hosted by the Forschungszentrum Karlsruhe, IMK-IFU, and its activities are conducted under supervision and through funding by the Quality Assurance/Science Activity Centre (QA/SAC) Germany, operated by the German Environment Agency (UBA). Among the major tasks of the WCC-N_2O are the development of quality control procedures, conducting audits at stations and intercomparison experiments as well as providing training and technical advice to GAW station personnel. The WCC-N_2O is linked to the GAW standard scale maintained by the Central Calibration Laboratory (CCL) for N_2O. This presentation reports primarily on activities of the WCC-N_2O since the 14th Experts Meeting in 2007.

Extensive comparisons of standards were conducted in the laboratory of the WCC-N_2O. A noteworthy experiment was the participation in a round-robin experiment initiated by a group of National Metrology Institutes (NMI), which provides a link to their N_2O scale. The eight highest-ranking standards of the WCC-N_2O, which establish the link to the GAW N_2O scale, were recalibrated by the GAW CCL in early 2009. The results confirmed the assigned mole fractions of the standards.

Two audits were conducted at global GAW stations (September 2007 and November 2008). Another audit took place at an associated laboratory in December 2008. Results of these audits are shown and discussed.

Editing work on the Measurement Guidelines (MGs) for N_2O has been finalized. The MGs for N_2O are part of a WMO/GAW report containing Data Quality Objectives (DQOs) and Measurement Guidelines for both CH_4 and N_2O. The report is available from the GAW web site. Further activities of the WCC-N_2O comprised contributions to four GAWTEC courses (2007 – spring 2009) in the form of nine lectures.