QOS2016-227, 2016
Quadrennial Ozone Symposium of the International Ozone Commission

EUBREWNET - A European Brewer Network, COST Action ES1207

J. Rimmer
University of Manchester, Manchester, United Kingdom (john.s.rimmer@manchester.ac.uk)

(on behalf of the Management Committee and Working Group members)

The fully automated Brewer Ozone Spectrophotometer has provided high quality total ozone column data for more than 30 years and is now deployed at most of the ground based total ozone column (TOC) monitoring stations. It is also capable of measurements of ozone vertical profiles (Umkehr method), spectral UV radiation and aerosol optical depth in the UV (AOD-UV), as well as columns of other trace constituents such as sulphur dioxide and nitrogen dioxide. Out of the two hundred plus throughout the world, there are around fifty Brewer spectrophotometers deployed within Europe (some already since the early 1980s), independently operated by national agencies. This represents not only a significant proportion of the total global monitoring effort, but also an extremely valuable European resource of co-located TOC, UV and AOD-UV measurements which is considerably underused due to the lack of coordination and harmonisation between the respective agencies. The co-location of these measurements is crucial for providing consistent data for research into radiative transfer and forecasting models, however the existing disparity severely restricts the overall utility of European data. Since Brewer measurements constitute a long term monitoring operation and the data provides the foundation for end users including forecasting agencies, policy decision makers, general public, academic personnel and other researchers, this COST Action ES1207 was proposed to facilitate the harmonization of procedures and therefore spatially consistent data, through networking and capacity building.
Now in its third year, EUBREWNET is becoming established with a new near real time database at its core. Characterisation and calibration protocols have been standardised for ozone and, partially, for UV, with AOD-UV methods also under development. Raw data is automatically uploaded to the database where it is centrally processed and quality assured in near real time. The EUBREWNET algorithm accounts for filter and stray light corrections as well as the usual standard lamp stability checks and the data output is layered according to the level of processing applied.
EUBREWNET has also organised training schools for Brewer operators both from and outside of Europe and a number of short term scientific missions which serve to both further the goals of EUBREWNET and provide valuable networking for early stage researchers.
EUBREWNET's non-European international partners now include NOAA, Environment Canada, WMO, York University (Toronto), Algeria and International Ozone Services with applications also in progress from the University of Tasmania in Australia. It is envisaged that the new NRT data base will expand and be a valuable data resource for the future.