



## **Comparison of stratospheric ozone measurements by Dobson and Brewer spectrophotometers**

B. Scarnato (1), J. Staehelin (1), R. Stübi (2), H. Schill (2)

(1) IAC/ETH, Zürich, Switzerland, (2) MeteoSwiss, Aerological Station, Payerne, Switzerland

Dobson and Brewer spectrophotometers are the primary standard instruments used for ground-base measurements of Total Ozone (TOZ) in the Global Atmospheric Watch (GAW) program of the World Meteorological Organization's (WMO). One of the most important goal of this study is to explore the use of the redundancies of the Dobson and Brewer total ozone measurements to strengthen the data quality control of the total ozone series of Arosa.

In Arosa there are two semi-automatic Dobson systems (D62, D101 since 1992) and three automatic Brewer instruments (Br40 since 1988, Br72 since 1991 and Br156 double Brewer since 1998), which measure total ozone continuously and quasi-simultaneously. TOZ of Brewer and Dobson reproduce the seasonal variation and the day-to-day variability, however a seasonal cycle in the difference of readings between Brewer and Dobson (AD wavelength pair) is evident. This reflects mainly the temperature dependence of ozone cross section and the fact that TOZ measurements are not based on the same wavelengths in both instruments.

A statistical model has been used to characterize the influence of atmospheric variables in the instrumental readings. The difference of two coincident measurements is compared with some explanatory atmospheric parameter like the temperature at a pressure level and the air mass of the slant column. The cycle in difference is strongly reduced introducing in the statistical model the temperature at certain pressure levels and the air mass.

More details of the comparison will be presented in a poster.