Atmos. Chem. Phys. Discuss., 8, S1049–S1051, 2008
www.atmos-chem-phys-discuss.net/8/S1049/2008/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Antarctic network of lamp-calibrated multichannel radiometers for continuous ozone and uv radiation data" *by* A. Redondas et al.

Anonymous Referee #1

Received and published: 28 March 2008

General comments

The manuscript describes an Antarctic network of UV multichannel radiometers. The network has been in continuous operation since 2000. It is very positive that the measurements are made available to the scientific community. UV indices, UV-A, UV-B, PAR-radiation and important UV controlling factors like total ozone and cloud effects are also made available.

Although the main objective of the paper (according to the title) is to present the UV network and QA/QC, a more detailed discussion of the data should be included.

Measured UVIs by the reference NILU-UV are compared with the SUV spectroradiometer in Ushuaia. One of the local NILU-UVs should also be compared with some independant UV radiometer. Perhaps the local NILU-UV in Ushuaia could be compared with either the SUV or the GUV for a period of time, e.g. for a year or so?

The quality of the ozone measurements is not discussed at all. Why not show time series of ratios of measured ozone from the network instruments to ozone measured by a satellite (e.g. OMI measurements starting in 2004)?

Some of the channels show large drifts. However, this is not a problem as long as the drift is accounted for by using frequent and reliable relative lamp calibrations.

I recommend publication in ACP after a satisfactorily revision of the manuscript. The written english should be improved.

Specific comments

P3388 L10-11: Is the instrument able to maintain the detector temperatur at 40C at strong wind conditions and low temperatures?

P3389 L18-23: Please add comments about how well the three lamps agree. Are the results in Fig 1 average of two lamps?

P3391 L20-21: "The look-up table also depends on the atmosphere, ozone profile, aerosols, clouds and surface albedo." Is the look-up table only weakly dependent on these parameters? Or are any corrections applied. If so, how?

P3392 L3-17: The UVI and ozone measurements shown in Fig 2 are based on the manufacturer's absolute calibration at Izana in 1999 and time series of relative lamp corrections at each station. Are measurements from the travelling reference instrument used to correct the measurements at each station? How does the travelling reference instrument agree with the local instruments?

P3392 L20-22: To demonstrate that the instrument is able to measure rapid ozone

ACPD

8, S1049–S1051, 2008

changes add a figure showing high time resolution ozone measurements for a couple of days representing large ozone changes. Include Satellite measurements in the figure. (This is only a suggestion.)

P3393 L11-12: "High daily doses are strongly connected to low ozone values at Marambio and low cloudiness at Belgrano." Please give some more details.

Technical comments

P3387 L16 and L19: "Land of the Fire". Why not use the original name "Tierra del Fuego"?

P3389 L17: "...reference NILU". Change to "...reference NILU-UV".

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 3383, 2008.