**Atmospheric
Measurement
Techniques
Discussions**

Interactive comment on "First national intercomparison of solar ultraviolet radiometers in Italy" *by* H. Diémoz et al.
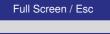
Anonymous Referee #2

Received and published: 9 June 2011

General comment:

This paper presents the results of an intercomparison of UV measurements performed with ground-based instruments during a campaign in Italy. The aim of such a campaign is to check the consistency and the accuracy of all the measuring instruments before the settling of a network.

The analysis of the measurements is carefully and honestly conducted. The technique proposed to perform the comparison of high frequency broadband measurements with spectra is interesting and seems efficient. In addition performances of the various radiometers are detailed allowing to make a classification between them.

This paper should be useful for people willing to perform accurate UV measurements

within a network and willing to carry out comparisons between measurements from different types of instruments.

Specific comments:

Section 2.5: - there are not enough details in Table 4. - the authors say that the solar spectrum is taken from Atlas 3 plus Modtran, but in Modtran it is possible to choose among several extraterrestrial spectra. Details must be given. - the choice of aerosol parameters must be explained. For ex, why the SSA default value has been reduced and what is its new value? The Angstrom parameter "beta" comes from the Brewer, therefore I believe it is not the turbidity (beta is AOD at 1000nm); if beta is really the AOD at 1000 nm, how has it been obtained ? Similarly how is defined alpha? Does it come from Brewer as can be understood when reading table 4? Give details. - replace "effective albedo" with "effective ground albedo". - Explain why the pressure is taken equal to a constant value; was there no meteorological measurements on the site? Does this lead to no error? - the factor to account for the horizon is equal to 95% , that means it does not depend on the SZA, aerosols, etc. Justify this assumption. - in the processing of the simulated spectra, is there a convolution with the slit function of the reference instrument ? Please give infos.

Section 4.1, lines 5-6: specify "or the UV-A unitary function between 315 and 400 nm and zero below 315 nm".

Section 5.2, line 44: the last sentence "This behaviour should be probably. . ." is rather amazing. It must be changed.

Caption of Figure 3: the word "broadband" before "UV-A irradiance" is in my opinion redundant.

Caption of Figure 3: I wonder if measurements that are not made before sunrise or after sunset must be called "missing data". Please change the sentence.

Figures 7 and 8: Specify in the captions that it is for clear sky.

Technical corrections:

- p. 3, line 23: "irrandiance" -> "irradiance".

- p 4, line 11: remove the word "and" before the word "depending".

- caption of Figure 3: "occurs" -> "occur".

- caption of Figure 9: "id04" -> "id14"

Interactive comment on Atmos. Meas. Tech. Discuss., 4, 2789, 2011.