Atmos. Chem. Phys. Discuss., 8, S120–S121, 2008
www.atmos-chem-phys-discuss.net/8/S120/2008/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Utilising polyphenylene oxide for high exposure solar UVA dosimetry" *by* D. J. Turnbull and P. W. Schouten

Anonymous Referee #2

Received and published: 7 February 2008

General comments: The paper describes a new UVA dosimeter for measuring high UVA exposures. The development of UVA personal dosimetry is very important from the point of view of acute response of humans to UV irradiance. The suggestion of the authors to utilize the polyphenylene oxide for this purpose seems to be encouraging.

However, the reviewer has several principle remarks due to which he has an inclination to reject the manuscript in this form for publishing in the ACP.

The first principle remark concerns the structure of the manuscript. The text is written like an extended abstract. Several sections contain only one-two sentences, which are not very informative. The discussion section is small and not full. No conclusions were included in the text. Second, a lot of doubts have been raised by the phrase, which

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

appeared at the very end of the text. The authors write "..the profile of calibration will vary with the season.." However, the authors do not show the range of this possible variation, the nature of the phenomenon. This, for example, can mean that the calibration can vary with the atmospheric parameters: solar zenith angle, cloudiness, etc. This, of course, is not permissible. This statement should be carefully examined or, otherwise, this can mean that the obtained results are not reliable.

Specific comments:

1. In Abstract and further: I am not sure that an exposure of 20 MJ/m2 is high enough for a UVA dosimeter. Even at high latitude in summer monthly UVA exposure is about 27-35 MJ/m2. No higher levels than 20 MJ/m2 can be seen from the Fig. 4. 2. There is no numeration of the equations (see equations on page 2133 and the "corrupted" equation on page 2134). 3. In the part of the discussion on the quality of PPO dosimeters there is no clearness if they have been utilized in the measurements of global UV-A exposures. The later paper of Davis et al., 1981 mentions only the UV-B range. It should be rewritten and clarified. 4. p.2133. It would be much better to use the full name of the instrument: 501 UVA Biometer, Solar Light Co., not to confuse the reader with the 501 Biometer (which is used for UV-B measurements). 5. There is a lot of details concerning the spectrometer which had been used for calibration of 501 UVA Biometer but no information concerning the resulting error of this device itself. No information about the stability of the instrument, about its reproducibility. 6. Several sections (i.e., section 2.3) are impossibly short and non informative. In section 2.3, for example, there is no any information about the results of the reproducing of the data.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 2129, 2008.