Atmos. Chem. Phys. Discuss., 8, S1909–S1910, 2008
www.atmos-chem-phys-discuss.net/8/S1909/2008/
© Author(s) 2008. This work is distributed under
the Creative Commons Attribute 3.0 License.

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

D. J. Turnbull and P. W. Schouten

Received and published: 24 April 2008

1. All sections of the paper have been expanded to provide more detail and clarification. 2. The following has been added to page 5, section 4: Schouten et al (2008) found that when the PPO dosimeter is calibrated to UVB wavelengths over different seasons there was a slight but definite variation between calibration profiles. However, when PPO is calibrated to UVA wavelengths this variation will be significantly reduced due to the fact that UVA wavelengths are not affected by atmospheric parameters to the extent that UVB wavelengths are. 3. For the Toowoomba measurement site, 20MJ/m2 equates to approximately two weeks of full day UVA exposures under clear sky conditions. The PPO film is more than adequate as a UVA dosimeter even for those latitudes that experience monthly UVA exposures above 20MJ/m2. For example, the researcher can simply replace the dosimeters in the field when they are close to saturation with

a new unexposed set of dosimeters. 4. The equations have all been numerated. 5. The second last sentence of section 1 has been changed to provide clarification: PPO dosimeters have been utilised in the measurement of global UVB and erythemal exposures, however, they have not been used to measure solar UVA exposures. A similar clarification is also stated in section 4. 6. The full name of the instrument now reads: 501 UVA Biometer. 7. The following has been added to page 4, section 2.2: The container in which the spectroradiometer is housed is temperature stabilised with a Peltier system and the temperature set to 25 oC. The temperature inside the container at each scan is recorded by the software. For the times that the temperature inside the container housing the spectroradiometer varied by more than 1 oC from the set temperature due to hot ambient temperatures, the manufacturer supplied temperature correction factor of -0.4%/oC was applied in the post processing to the spectral irradiance data collected at each 0.5 nm increment. This correction was the same at all wavelengths. The wavelength shift of the instrument due to temperature as provided by the manufacturer is 0.005 nm/oC. Consequently, any wavelength shift was minimal and no correction for wavelength shift has been applied. 8. These sections have now been expanded to provide more detail.

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

ACPD

8, S1909–S1910, 2008

Interactive Comment