

Home

Online Library ACP

- Recent Final Revised Papers
- Volumes and Issues**
- Special Issues
- Library Search
- Title and Author Search

Online Library ACPD

Alerts & RSS Feeds

General Information

Submission

Review

Production

Subscription

Comment on a Paper



[Volumes and Issues](#) [Contents of Issue 16](#) [Special Issue](#)

Atmos. Chem. Phys., 8, 4865-4875, 2008

www.atmos-chem-phys.net/8/4865/2008/

© Author(s) 2008. This work is distributed under the Creative Commons Attribution 3.0 License.

Intercomparison of erythemal broadband radiometers calibrated by seven UV calibration facilities in Europe and the USA

G. Hülsen¹, J. Gröbner¹, A. Bais², M. Blumthaler³, P. Disterhoft⁴, B. Johnsen⁵, K. O. Lantz⁴, C. Meleti², J. Schreder⁶, J. M. Vilaplana Guerrero⁷, and L. Ylianttila⁸

¹Physikalisch-Meteorologisches Observatorium Davos/World Radiation Center, Dorfstrasse 30, 7278 Davos Dorf, Switzerland

²Aristotle University of Thessaloniki, Laboratory of Atmospheric Physics, Campus Box 149, 541 24 Thessaloniki, Greece

³Innsbruck Medical University, Division for Biomedical Physics, Müllerstr. 44, 6020 Innsbruck, Austria

⁴National Oceanic and Atmospheric Administration, Central UV Calibration Facility, 325 Broadway, 80305 Boulder, CO, USA

⁵Norwegian Radiation Protection Authority, Grini Naeringspark 13, 1361 Osteras, Norway

⁶CMS Ing. Dr. Schreder GmbH, Eggerstrasse 8, 6322 Kirchbichl, Austria

⁷Instituto Nacional de Técnica Aeroespacial, Estación de Sondeos Atmosféricos El Arenosillo, 21130 Mazagon, Spain

⁸STUK, Radiation and Nuclear Safety Authority, Non-Ionizing Radiation Laboratory, P.O. Box 14, 00881 Helsinki, Finland

Abstract. A bi-lateral intercomparison of erythemal broadband radiometers was performed between seven UV calibration facilities. The calibrations provided by the instruments owners were compared relative to the characterisation and calibration performed at PMOD/WRC in Davos, Switzerland. The calibration consisted in the determination of the spectral and angular response of the radiometer, followed by an absolute calibration performed outdoors relative to a spectroradiometer which provided the absolute reference.

The characterization of the detectors in the respective laboratories are in good agreement: The determinations of the angular responses have deviations below $\pm 4\%$ and the spectral responses agree within $\pm 20\%$. A "blind" intercomparison of the erythemally weighted irradiances derived by the respective institutes and PMOD/WRC showed consistent measurements to within $\pm 2\%$ for the majority of institutes. One institute showed slightly larger deviation of 10%. The differences found between the different instrument calibrations are all within the combined uncertainty of the calibration.

[Final Revised Paper](#) (PDF, 698 KB) [Discussion Paper](#) (ACPD)

Citation: Hülsen, G., Gröbner, J., Bais, A., Blumthaler, M., Disterhoft, P., Johnsen, B., Lantz, K. O., Meleti, C., Schreder, J., Vilaplana Guerrero, J. M., and Ylianttila, L.: Intercomparison of erythemal broadband radiometers calibrated by seven UV calibration facilities in Europe and the USA, Atmos. Chem. Phys., 8, 4865-4875, 2008. [Bibtex](#) [EndNote](#) [Reference](#)

Search ACP

Library Search

Author Search

News

- Sister Journals AMT & GMD
- Financial Support for Authors
- Journal Impact Factor
- Public Relations & Background Information

Recent Papers

01 | ACPD, 17 Nov 2008: Carbonaceous aerosols at urban influenced sites in Norway

02 | ACPD, 17 Nov 2008: Introduction: European Integrated project on Aerosol Cloud Climate and Air Quality interactions (EUCAARI) – integrating aerosol research from nano to global scales

03 | ACPD, 17 Nov 2008: Statistical analysis of non-methane hydrocarbon variability at a European background location (Junqfraujoch, Switzerland)

