

File Revision Date:

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Data Set Description:

PI: S. Simic, BOKU, AUT

Instrument: UV Spectroradiometer (Bentham DM150)

Site: Groß-Enzersdorf, Austria (48.20N, 16.56E, 156 m)

Measurement Quantities:

cosine weighted spectral irradiance on a horizontal surface, 290 - 410 nm at 0.60 nm resolution (FWHM).

scans are taken at intervals of 0.5 hours from sunrise to sunset, scan duration is approx. 7 min

The data summaries on the NDSC database include the following:

1. Erythema UV, ER (Wm-2) (McKinlay and Diffey 1987)
2. DNA-weighted UV, DNA (Wm-2) (Green et al. 1975)
3. Plant, PLA (Wm-2) (Green et al. 1974)
4. UVB (Wm-2)
5. UVA (Wm-2)

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Instruments Description:

entrance optics cosine response error is about 2% for $SZA \leq 60$ degrees

Wavelength shift is corrected with SHICrvm program, residual shift is lower than 0.02 nm in

Wavelength step size is 0.5 nm

Slit function:

Since 2011-04 FWHM is approx. 0.62 nm

Before 2010-09 FWHM is approx. 0.60 nm

Before 2010-09 FWHM is approx. 0.59 nm

Before 2008-05 FWHM is approx. 0.64 nm

Straylight rejection specification of $1e-3$ at 2.5 FWHM is met

Straylight rejection specification of $1e-5$ at 6.0 FWHM not met

Absolute calibration uncertainties are lower than 10%.

Algorithm Description:

Since 2010-12: Control and acquisition software is Bentham Instruments Ltd. BenWin+ 3, modified for SAM-switching and TimeSync

Before 2010-12: Control and acquisition software is Bentham Instruments Ltd. ss9103.exe, latest revision, modified for SAM-swichtching

Dark current is automatically deduced from routine measurements and calibration measurements
Reference irradiance interpolated (modified black-body, NIST SSBUV routine) between calibrated wavelengths

Wavelength shift calculated with SHICrvm algorithm program (version 3.075), wavelength shift corrected.

signal converted into irradiance with calibration constants from NIST and PTB calibrated radiation standards

Instrument History:

1998-03 start of continuous operation

1998-12 until

1999-03 CUVRA campaign and preparation

2004-02 set-up and test of improved temperature stabilizing unit, enters regular service

2004-05 QUASUME intercomparison

2007-12 until

2008-07 field campaigns

2008-08 addition of second entrance optics for actinic flux, switched to via switchable SAM, data not part of NDACC

2010-07 mechanical defect of monochromator, service period, defective data excluded

2010-09 re-entrance into regular operation

2011-02 mechanical defect of monochromator, service period, defective data excluded

2011-05 re-entrance into regular operation