Objectives of the WRMC

In 1992, the World Climate Research Programme (WCRP) initiated the Baseline Surface Radiation Network (BSRN) and its central archive called World Radiation Monitoring Center (WRMC).

The objective of the WRMC is to provide observations of the best possible quality, for short and long-wave surface radiation fluxes. The uniform and consistent measurements throughout the BSRN network are used to:

1. monitor the background short and long-wave radiative components and their changes with the best methods currently available,
2. provide data for the validation and evaluation of satellite-based estimates of the surface radiative fluxes and
3. produce high-quality observational data for comparisons with climate model (GCM) calculations and for the development of local regionally representative radiation climatologies.

Available datasets

The typical average interval for radiation data is 1 minute. All data can be retrieved interactively by any registered scientist from a ftp-server and the Publishing Network for Geoscientific & Environmental Data PANGAEA (http://www.pangaea.de/search?q=BSRN)

The parameters within the archive files are given below:

- Global, Diffuse, Direct, Long-wave down: 51 stations, 5835 months
- Reflex, Long-wave up: 9 stations, 1521 months
- UV: 12 stations, 1309 months
- Synoptic observations: 29 stations, 3038 months
- Upper air soundings: 9 stations, 1218 months
- Total ozone: 29 stations, 1309 months
- Aerosol optical depths (under construction): 14 stations
- Ceilometer data: 3 stations, 501 months
- Radiation measurements from tower: 11 stations, 1926 months

Services of the WRMC

Since 2008, AWI hosts the WRMC and offers the following services:

1. FTP Server, ftp.bsrn.awi.de for incoming and outgoing BSRN data.
3. Developing a quality management system for the WRMC.
4. Full PANGAEA service for any dataset, which is detailed as follows:
   - Offering a Google-like interface for searching BSRN datasets.
   - Presenting well-defined metadata for any BSRN dataset.
   - Presenting the measurements in different formats.
   - Offering software, e.g. “PanPlot” and “BSRN-Toolbox” (doi:10.1594/PANGAEA.744019) for visualizing and analyzing any PANGAEA derived BSRN dataset.
   - Making any dataset citable by applying digital object identifiers (doi).
   - Guaranteeing long-term availability of all datasets.
   - Following the “Berlin Declaration on Open Data Access”.

Web based data retrieval via PANGAEA