IPC-XIII timing and data format

This document describes the measurement sequence and file format to be obeyed by all participants who use their own computerized data acquisition system durnig IPC-XIII.

Measurement Series

All irradiance measurements will be taken in series' of 19.5 minutes duration. Each series will start on a full minute which is dividable by three, e.g. ..:00, ..:03, ..:06, etc. The times will be recorded in CET (UTC+1), please synchronize your computers to our network time servers ntp1.pmodwrc.ch, ntp2.pmodwrc.ch. The start time of the series is the time, when the *first irradiance reading* is taken. Enough lead time (4 minutes) will be allowed for preparation and electrical calibration before each series. The base cadence is one irradiance reading every 90 seconds, allowing for 14 irradiance readings at the base cadence. Faster/slower cadences are acceptable if they are an integer multiple/fraction of the base cadence, e.g. 30 sec, 180 sec.

File Format for Data Submission

Please generate *separate data files for each pyrheliometer*. You may produce data files for each measurement series or data files for an entire day. The files have to be ASCII encoded and obey the following format:

```
AHF-32455                                   ; Pyrheliometer serial number
WRR 1.000000                                ; Applied WRR factor (should be 1)
2021 10 07   11:54:00     989.36000         ; YYYY MM DD HH:MM:SS Irradiance [W/m²]
2021 10 07   11:55:30     989.21000
2021 10 07   11:57:00     989.19000
2021 10 07   11:58:30     988.97000
2021 10 07   12:00:00     989.90000
2021 10 07   12:01:30     989.57000
2021 10 07   12:03:00     989.36000
2021 10 07   12:04:30     989.21000
2021 10 07   12:06:00     989.19000
2021 10 07   12:07:30     988.97000
2021 10 07   12:09:00     989.90000
2021 10 07   12:10:30     989.57000
2021 10 07   12:12:00     988.97000
2021 10 07   12:13:30     989.90000
```

Any number of blanks (“space”) or Tabs are acceptable delimiters. The file name must start with the Pyrheliometer serial number and contain the date/time information, e.g. “AHF-32455_21.10.07_1154.dat”. Data files can be uploaded via FTP either during or at the end of the day.

Manual Data Submission

A web interface will be provided for manual recording and submission of irradiance readings. The web interface will guide you through the measurement sequence, which will be slightly different from the above. Participants who do not have an automated data acquisition system should bring a laptop computer or other wireless device with a current web browser.