PMIP4 SATIRE-M solar forcing data

The files contain Solar Spectral Irradiance reconstruction based on 14C or 10Be and the SATIRE-M model, with and without an adaptation of the spectral irradiance to the CMIP6 *historical* forcing.

- 14C data for the last 9000 years (6754.5 BC to December 2015)
- 10Be data for the years 885 CE to December 2015

The data set scaled to the CMIP6 historical forcing is the **recommended forcing for the PMIP4-CMIP6 *tier-1* past1000 experiment**.

Data files

- file names = `SSI_<type>_cycle_yearly_cmip_v20160613_<scaling>.txt`
  - `type` = 14C or 10Be
  - `scaling` =
    - `fc`: adaptation of the spectral irradiance to the CMIP6 *historical* forcing
    - `nfc`: no re-scaling

Data format

The data are provided in simple text format. The file structure is as follows:

- 1st array: **wavelength array** in [nm], listing the center of each wavelength bin.
- 2nd array: **wavelength bin** in [nm], listing the bin width of each wavelength bin.
- 3rd array: **time** in [year] (floating numbers).
- 4th array: *SSI* reconstruction in [W m-2 nm-1]. SSI is average SSI in corresponding bin.

We provide the following IDL code to read the `.txt` file and calculate TSI:

```
;=====================================================
;N=69235 for 14C reconstruction
;N=61595 for 10Be reconstruction
header=strarr(12)
satire_wl=dblarr(1070)
satire_dwl=dblarr(1070)
time=dblarr(N)
SSI=dblarr(1070,N)

openr,1,filename
 readf,1,header
 readf,1,satire_wl
 readf,1,satire_dwl
 readf,1,time
 readf,1,SSI
close,1
```

```
TSI=dblarr(N)
FOR i=0L,N-1 DO TSI[i]=TOTAL(satire_dwl*SSI[*,i])
;=======================================================
```

References

Fix Me!

Download

You will find below a table with all the available data files, and their md5sum checksum (if you want to check that you download was OK, you can just type `md5sum file.nc` and compare the result to what is displayed in the table).

If you want to download a file, click on the PMIP4 SATIRE-M solar forcing data download link and then on the file you need. The files are currently protected by a password. Get in touch with Jean-Yves Peterschmitt if you need to access them.

md5sum output	Data file
636519aa89b472a04748893d6f3ff1b3	SSI_14C_cycle_yearly_cmip_v20160613_fc.txt.bz2
86bae35d2cd4d7f2c3dde9ee567d5a87	SSI_14C_cycle_yearly_cmip_v20160613_nfc.txt.bz2
96cdeb6a561f0be6b83e1b45a809f8ad	SSI_10Be_cycle_yearly_cmip_v20160613_fc.txt.bz2
0516a6a073c25365674a004034392130	SSI_10Be_cycle_yearly_cmip_v20160613_nfc.txt.bz2

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