PMIP4 PMOD_14C solar forcing data

The PMOD_14C data set provides annual mean spectral solar irradiance (**SSI**) and total solar irradiance (**TSI**) covering the 850-1850 time period.

SSI data are available for the spectral range 120-100000 nm, with resolution:

- 1 nm between 120 and 750 nm
- 5 nm between 750 and 5000 nm
- 10 nm between 5000 and 10000 nm
- 50 nm from 10000 nm

The spectral grid is identical to the spectral grid used for the CMIP SSI data set for the wavelength longer than 120 nm. The SSI data have been scaled to match CMIP SSI in 1850.

Get the *Description of an alternative SSI dataset for PMIP* document in the References section below for more information!

Data file and format

The data are available in simple text format with the description of the file structure in the header

- file name = `pmip4_corr_c14_v20160613.dat`

In addition we provide a FORTRAN routine to read the data and transform them to a user defined spectral grid.

References

More details about this dataset can be found in the

Description of an alternative SSI dataset for PMIP document

- Fontenla, J., O. White, P. Fox, E. Avrett, and R. Kurucz, Calculation of solar irradiances. I. Synthesis of the Solar Spectrum, The Astrophysical Journal, 518, 1, 480-499, 1999, doi:10.1086/307258
- Judge, P., G. Lockwood, R. Radick, G. Henry, A.I. Shapiro, W. Schmutz, and C. Lindsey, Confronting a solar irradiance reconstruction with solar and stellar data. Astronomy & Astrophysics, 544, A88, 6, 2012, doi:10.1051/0004-6361/201218903
- Krivova, N. A., S. K. Solanki, M. Fligge, and Y. C. Unruh, Reconstruction of solar total and spectral irradiance variations in cycle 23: is solar surface magnetism the cause? Astron. Astrophys., 399, L1–L4, 2003, doi:10.1051/0004-6361:20030029
- Shapiro, A. I.; Schmutz, W.; Schoell, M.; Haberreiter, M.; Rozanov, E. NLTE solar irradiance modeling with the COSI code, Astronomy and Astrophysics, 517, A48, 13, 2010, doi:10.1051/0004-6361/200913987
- Shapiro, A. I.; Schmutz, W.; Rozanov, E.; Schoell, M.; Haberreiter, M.; Shapiro, A. V.; Nyeki, S.

(SSR11), A new approach to long-term reconstruction of the solar irradiance leads to large historical solar forcing, Astronomy & Astrophysics, 529, A67, 8, 2011, doi:10.1051/0004-6361/201016173
- Solanki, S., N. Krivova and J. Haigh, Solar irradiance variability and climate, Ann. Rev. Astron. Astrophys., 51, 311–351, 2013, doi:10.1146/annurev-astro-082812-141007
- Usoskin, I., Y. Gallet, F. Lopes, G. Kovaltsov, G. Hulot, Solar activity during the Holocene: the Hallstatt cycle and its consequence for grand minima and maxim. In press: Astron. Astrophys., 587, A150, 2016, doi:10.1051/0004-6361/201527295

Download

Once you have downloaded the compressed text data file, you can use the command `bzmore` to have a quick look at its content without having to uncompress it!

```
  > bzmore pmip4_corr_c14_v20160411.dat.bz2
------> pmip4_corr_c14_v20160411.dat.bz2 <---
---
Annual mean SSI and TSI for PMIP provided by
PMOD/WRC
Time period 850-1850
Number of years    1001
Number of spectral bins    3780

Structure of the file
Start of the spectral bins in nm,
format=(10(e12.4))
Length of the spectral bins in nm,
format=(10(e12.4))
Year and TSI in W/m**2, format=(I4,1x,e12.4)
SSI in W/m**2/nm, format=(10(e12.4))

  1.2000e+02  1.2100e+02  1.2200e+02
1.2300e+02  1.2400e+02  1.2500e+02  1.2600
e+02  1.2700e+02  1.2800e+02  1.2900e+02
  1.3000e+02  1.3100e+02  1.3200e+02
1.3300e+02  1.3400e+02  1.3500e+02  1.3600
e+02  1.3700e+02  1.3800e+02  1.3900e+02
```

If you want to download a file, click on the PMIP4 PMOD_14C solar forcing data download link and then on the file you need.

md5sum output	Data file	Size
f48a9d042c0f7100dae17375d218c4e1	pmip4_corr_c14_v20160411.dat.bz2	5.8 Mb

From:
https://pmip4.lsce.ipsl.fr/ - **PMIP4**

Permanent link:
https://pmip4.lsce.ipsl.fr/doku.php/data:solar_pmod

Last update: **2019/11/18 11:49**