

PMIP4-CMIP6 solar forcing data

You will find on this page some of the boundary condition data that you have to use for

- [Last Millennium](#)
- [past2k](#)



Please make sure to read the [HOWTO](#) section in order to use the data correctly!

Get in touch with the following people if you have questions:

Johann Jungclaus	Last Millennium, past2k
Natalia Krivova	Details on the SATIRE-based data sets
Tania Egorova	Details on the PMOD-based data set
Jean-Yves Peterschmitt	Technical questions

References

- Jungclaus et al., in preparation for Clim. Past

How to use the data

- Read the reference paper
- Note that the SATIRE-14C based data set adjusted to the CMIP6 historical forcing (SSI_14C_cycle_yearly_cmip_v20160613_fc.txt) is the default data set for PMIP4-CMIP6 past1000 experiment

Solar forcing data

Data history

The data files may change a bit (rename or standardize the data, etc...) and you will find the change list below

Data

SOLAR_FORCING_SATIRE_14C (link to the data page, below)

SOLAR_FORCING_SATIRE_10Be

SOLAR_FORCING_PMOD_14C

Data page: (lets just start with the default page)

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The PMIP4-CMIP6 SOLAR_FORCING_SATIRE_14C

The file contains solar spectral irradiance based on 14C and the SATIRE-M model for the last 9000 years (6754.5 BC to December 2015). Two versions are provided, one (*_fc.txt) with an adaptation of the spectral irradiance to the CMIP6 historical forcing, and one (*_nfc.txt) without such re-scaling. The data set scaled to the CMIP6 historical forcing is the recommended forcing for the PMIP4-CMIP6 “tier-1” past1000 experiment.

Data files

The data are provided in simple text format. The files contain the SSI reconstruction using SATIRE-M based on 14C isotopes.

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 following code (IDL) 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]) ;
```

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link to the .tar.gz file

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