A Big Earth Data Platform for Three Poles

**High spatial resolution (10km) surface solar radiation dataset with by merging sunshine hours over China China (1983-2017)**

1、Description

This data set is a national high-resolution solar radiation data set covering 34 years (1983.7-2017.6), with a resolution of 10 km. The data unit is W / m2. The data set is developed by merging the global high-resolution (3 hours, 10 km) surface solar radiation data set (1983-2017) with isccp-hxg cloud products as the main input, with ground based sunshine duration derived surface solar raidation data from 2261 meteorological stations in China by using the geographic weighted regression method. The validation results show that this dataset can provide more accurate simulation of long-term variability of surface solar radiation than that of gewex-srb, cmsaf-clara-a2 and the isccp-hxg based surface solar radiation product. This data can provide favorable data support for the application and research of long-term change of hydrology in land surface process simulation.

2、Keywords

Theme：Solar radiation,Radiation,Sunshine,Solar radiation,Atmosphere Remote Sensing
Discipline：Atmosphere
Places：China
Time：monthly, monthly, 1983-2017

3、Data details

1.Scale：None

2.Projection：WGS84

3.Filesize：431.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：54.8499994762241 | - |
| west：66.9500036798418 | - | east：136.650004718453 |
| - | south：15.2499988861382 | - |

5、Time frame:1983-06-30 16:00:00+00:00--2017-06-29 16:00:00+00:00

6、Reference method

References to data:

WANG Kaicun, FENG Fei. High spatial resolution (10km) surface solar radiation dataset with by merging sunshine hours over China China (1983-2017). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2710232020

References to articles:

Feng, F., Wang, K.C. (2021). Merging High-Resolution Satellite Surface Radiation Data with Meteorological Sunshine Duration Observations over China from 1983 to 2017. Remote Sensing, 13, 602.

7、Supporting project information

Surface solar radiation impact factors analysis and data fusion in China
Interaction and regional performance of natural and human factors on land surface driven by global change
Construction and application of high spatial-temporal resolution surface solar radiation data in China over last four decade

8、Data resource provider

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