A Big Earth Data Platform for Three Poles

**FY-4A terrestrial solar radiation product data set of the Qinghai Tibet Plateau (2018-2020)**

1、Description

Surface solar irradiance (SSI) is one of the products of FY-4A L2 quantitative inversion. It covers a full disk without projection, with a spatial resolution of 4km and a temporal resolution of 15min (there are 40 observation times in the whole day since 20180921, except for the observation of each hour, there is one observation every 3hr before and after the hour）, and the spectral range is 0.2µ m～5.0 µ m. The output elements of the product include total irradiance, direct irradiance on horizontal plane and scattered irradiance, the effective measurement ranges between 0-1500 w / m2. The qualitative improvement of FY-4A SSI products in coverage, spatial resolution, time continuity, output elements and other aspects makes it possible to further carry out its fine application in solar energy, agriculture, ecology, transportation and other professional meteorological services. The current research results show that the overall correlation of FY-4A SSI product in China is more than 0.75 compared with ground-based observation, which can be used for solar energy resource assessment in China.

2、Keywords

Theme：Solar radiation,Radiation,Sunshine,Atmosphere Remote Sensing
Discipline：Atmosphere
Places：Qinghai-Tibet Plateau
Time：2018-2020

3、Data details

1.Scale：None

2.Projection：

3.Filesize：146340.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.0 | - |
| west：75.0 | - | east：106.0 |
| - | south：24.0 | - |

5、Time frame:2017-12-31 16:00:00+00:00--2020-12-30 16:00:00+00:00

6、Reference method

References to data:

SHEN Yanbo, HU Xiuqing, HU Yueming. FY-4A terrestrial solar radiation product data set of the Qinghai Tibet Plateau (2018-2020). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2712732021

References to articles:

王传辉, 申彦波, 翟振芳, 丘康俊. (2020). FY-4A星地面太阳辐射产品检验与订正——以安徽为例. 太阳能学报.

梁进秋, 申彦波(通讯作者), 胡丽琴. (2020). FY-4A地表太阳入射辐射产品在山西高原的适用性研究. 气象.

徐丽娜, 申彦波, 李忠, 叶虎. (2021). 基于概率密度匹配方法的FY-4A地表入射辐射订正. 高原气象.

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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