A Big Earth Data Platform for Three Poles

**FY-4A Surface Solar Radiation Refined assessment dataset over the Tibetan Plateau (2019-2021)**

1、Description

The data are fy-4a ground solar radiation products in Qinghai Tibet Plateau, including GHI \ DNI \ dif The channels involved in FY4 surface solar incident radiation inversion algorithm include six channels of imager visible light, near-infrared and short wave infrared: ch1 (0.45-0.49 μ m), CH2 (0.55-0.75 μ m), CH3 (0.75-0.90 μ m), CH4 (1.36-1.39 μ m), CH5 (1.58-1.64 μ m) and ch6 (2.1-2.35 μ m). The regression model relied on by the algorithm needs to be established through radiative transfer simulation and statistical analysis in advance. The regression model defines the regression relationship between the surface solar incident radiation and the multi-channel radiation observation of the imager, which is a function of the solar observation geometry and the most important influence parameters (cloud, aerosol, water vapor content, surface albedo, surface altitude, etc.). The algorithm uses the short wave radiation observation from channel 1 to channel 6 of FY-4 satellite imager to obtain the instantaneous state parameter information of atmosphere and surface, and obtains the surface altitude information from the surface elevation data. After determining the instantaneous atmospheric and surface states, combined with the solar angle and observation angle, according to the previously established regression model data, multi-dimensional linear interpolation is carried out to obtain the inversion products of surface solar incident radiation.

2、Keywords

Theme：Radiation,Solar radiation
Discipline：Atmosphere
Places：Qinghai-Tibet
Time：2019-2021, hourly

3、Data details

1.Scale：None

2.Projection：

3.Filesize：385024.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：37.5 | - |
| west：76.0 | - | east：100.5 |
| - | south：26.5 | - |

5、Time frame:2019-11-30 16:00:00+00:00--2021-11-30 03:59:59+00:00

6、Reference method

References to data:

SHEN Yanbo, HU Yueming, HU Liqin. FY-4A Surface Solar Radiation Refined assessment dataset over the Tibetan Plateau (2019-2021). A Big Earth Data Platform for Three Poles, doi:10.11888/Atmos.tpdc.2718842021

References to articles:

7、Supporting project information

8、Data resource provider

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