A Big Earth Data Platform for Three Poles

**Daily 250 m all-weather land surface temperature dataset in Southeast Tibet（2011）**

1、Description

The preparation of this data set is based on the proposed downscaling method of all-weather surface temperature data for the glacier area in Southeast Tibet. By analyzing the relationship between all-weather surface temperature and its spatio-temporal influence factor elevation, surface coverage type, vegetation index, snow cover index, surface reflectance and other data, a downscaling model of all-weather surface temperature is constructed, which increase the spatial resolution of all-weather surface temperature products from 1 km to 250 m. The validation results show that the RMSE of downscaling surface temperature at the site is about 2.25 K and 2.16 K in the daytime and at night, respectively, which is about 0.5 K higher than that of the original 1 km surface temperature product. The results of image quality index show that the downscaling surface temperature not only obtains a lot of detailed thermal information, but also maintains a high consistency with the original 1 km surface temperature in spatial pattern and amplitude. This data set has certain significance for high resolution all-weather surface temperature generation and disaster monitoring in glacier area of Southeast Tibet.

2、Keywords

Theme：Temperature,Downscaling
Discipline：Atmosphere,Terrestrial Surface,Remote Sensing Technology
Places：Southeastern Tibetan Plateau
Time：2011

3、Data details

1.Scale：None

2.Projection：Albers

3.Filesize：2.68MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：32.1 | - |
| west：91.4 | - | east：97.4 |
| - | south：28.8 | - |

5、Time frame:2010-12-31 16:00:00+00:00--2011-12-30 16:00:00+00:00

6、Reference method

References to data:

HUANG Zhiming , ZHONG Hailing , TANG Wenbin, ZHOU Ji. Daily 250 m all-weather land surface temperature dataset in Southeast Tibet（2011）. A Big Earth Data Platform for Three Poles, doi:10.11888/RemoteSen.tpdc.2719792022

References to articles:

Zhang, X., Zhou, J., & Liang, S., et al. (2020). Estimation of 1-km all-weather remotely sensed land surface temperature based on reconstructed spatial-seamless satellite passive microwave brightness temperature and thermal infrared data. ISPRS Journal of Photogrammetry and Remote Sensing, 167, 321-344.

黄志明, 周纪, 丁利荣等. (2021). 藏东南冰川地区250 m空间分辨率全天候地表温度生成.遥感学报, 25(8), 1873-1888.

Ma, J., Zhou, J., & Göttsche, F.-M, et al. (2020). A global long-term (1981-2000) land surface temperature product for NOAA AVHRR. Earth System Science Data, 12, 3247-3268.

7、Supporting project information

Integration and Demonstration of Monitoring and Early Warning Technology and Equipment for Debris Flow in Complex Mountainous Areas

8、Data resource provider

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