A Big Earth Data Platform for Three Poles

**A daily, 0.05° Snow depth dataset for Tibetan Plateau (2000-2018)**

1、Description

Under the funding of the first project (Development of Multi-scale Observation and Data Products of Key Cryosphere Parameters) of the National Key Research and Development Program of China-"The Observation and Inversion of Key Parameters of Cryosphere and Polar Environmental Changes", the research group of Zhang, Institute of Tibetan Plateau Research, Chinese Academy of Sciences, developed the snow depth downscaling product in the Qinghai-Tibet Plateau. The snow depth downscaling data set for the Tibetan Plateau is derived from the fusion of snow cover probability dataset and Long-term snow depth dataset in China. The sub-pixel spatio-temporal downscaling algorithm is developed to downscale the original 0.25° snow depth dataset, and the 0.05° daily snow depth product is obtained. By comparing the accuracy evaluation of the snow depth product before and after downscaling, it is found that the root mean square error of the snow depth downscaling product is 0.61 cm less than the original product.
 The details of the product information of the Downscaling of Snow Depth Dataset for the Tibetan Plateau (2000-2018) are as follows. The projection is longitude and latitude, the spatial resolution is 0.05° (about 5km), and the time is from September 1, 2000 to September 1, 2018. It is a TIF format file. The naming rule is SD\_yyyyddd.tif, where yyyy represents year and DDD represents Julian day (001-365). Snow depth (SD), unit: centimeter (cm). The spatial resolution is 0.05°. The time resolution is day by day.

2、Keywords

Theme：Downscaling,Snow depth,Snow,Cryosphere remote sensing products,Tibetan plateau,Surface Freeze-thaw Cycle/state Remote Sensing,Remote Sensing Technology,Settlement,Snowpack
Discipline：Remote Sensing Technology,Human-nature Relationship,Cryosphere
Places：Tibetan Plateau
Time：2000-2018

3、Data details

1.Scale：None

2.Projection：

3.Filesize：7398.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：39.85 | - |
| west：68.0 | - | east：104.7 |
| - | south：25.8 | - |

5、Time frame:2000-08-31 16:00:00+00:00--2018-08-31 16:00:00+00:00

6、Reference method

References to data:

MA Ning, YAN Dajiang, ZHANG Yinsheng. A daily, 0.05° Snow depth dataset for Tibetan Plateau (2000-2018). A Big Earth Data Platform for Three Poles, doi:10.11888/Snow.tpdc.2717432021

References to articles:

Yan, D., Ma N., Zhang Y. (2022). Development of a fine-resolution snow depth product based on the snow cover probability in the Tibetan Plateau: Validations and spatial-temporal analyses. Journal of Hydrology, 604,127027. https://doi.org/10.1016/j.jhydrol.2021.127027

7、Supporting project information

the National Key Research and Development Program of China

8、Data resource provider

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