A Big Earth Data Platform for Three Poles

**Daily fractional snow cover dataset over High Asia (2002-2016)**

1、Description

Due to the short snow duration and thin snow layer on the Tibetan Plateau, dynamic monitoring data for daily fractional snow cover are urgently needed in order to better understand water cycling and other processes. This data set is based on MODIS Snow Cover Daily L3 Global 500 m Grid data and includes the Normalized Difference Snow Index (NDSI) data product generated from MODIS/Terra data (MOD10A1) and MODIS/Aqua data (MYD10A1). The data are in the .hdf format. The projection method is sinusoidal map projection. Combining the advantages of 90 m SRTM terrain data and fractional snow cover estimation algorithms under multiple cloud coverage types, the fractional snow cover under different cloud coverage conditions can be re-estimated to meet the production requirements of the daily less cloud (< 10%) data products in High Asia. On the basis of this method, the MODIS daily fractional snow cover data set over High Asia (2002-2016) was constructed. By taking the binary snow product under cloudless conditions as a reference, the spatial and temporal comparisons between snow distribution and snow coverage show that the spatio-temporal characteristics of the product and the binary products are highly consistent. Taking the winter of 2013 as an example, when the fractional snow cover is greater than 50%, the correlation can reach 0.8628. This data set provides daily fractional snow cover data for use in studying snow dynamics, the climate and environment, hydrology, energy balance, and disaster assessment in High Asia.

2、Keywords

Theme：Snow depth,Snow,Cryosphere remote sensing products,Surface Freeze-thaw Cycle/state Remote Sensing,Snow cover
Discipline：Cryosphere
Places：Tibetan Plateau
Time：2002-2016

3、Data details

1.Scale：250000

2.Projection：

3.Filesize：23449.6MB

4.Data format：Geotiff

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：46.0 | - |
| west：62.0 | - | east：105.0 |
| - | south：26.0 | - |

5、Time frame:2002-07-25 00:00:00+00:00--2017-01-18 00:00:00+00:00

6、Reference method

References to data:

QIU Yubao. Daily fractional snow cover dataset over High Asia (2002-2016). A Big Earth Data Platform for Three Poles, doi:10.11888/GlaciolGeocryol.tpe.0000016.file2018

References to articles:

7、Supporting project information

CASEarth:Big Earth Data for Three Poles（grant No. XDA19070000）

8、Data resource provider

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