A Big Earth Data Platform for Three Poles

**Snow cover dataset based on multi-source remote sensing products blended with 1km spatial resolution on the Qinghai-Tibet Plateau (1995-2018)**

1、Description

This dataset is blended by two other sets of data, snow cover dataset based on optical instrument remote sensing with 1km spatial resolution on the Qinghai-Tibet Plateau (1989-2018) produced by National Satellite Meteorological Center, and near-real-time SSM/I-SSMIS 25km EASE-grid daily global ice concentration and snow extent (NISE, 1995-2018) provided by National Snow and Ice Data Center (NSIDC, U.S.A). It covers the time from 1995 to 2018 (two periods, from January to April and from October to December) and the region of Qinghai-Tibet Plateau (17°N-41°N, 65°E-106°E) with daily product, which takes equal latitude and longitude projection with 0.01°×0.01° spatial resolution, and characterizes whether the ground is covered by snow. The input data sources include daily snow cover products generated by NOAA/AVHRR, MetOp/AVHRR, and alternative to AVHRR taken from TERRA/MODIS corresponding observation, and snow extent information of NISE derived from observation by SSM/I or SSMIS of DMSP satellites. The processing method of data collection is as following: first, taking 1km snow cover product from optical instruments as initial value, and fully trusting its snow and clear sky without snow information; then, under the aid of sea-land template with relatively high resolution, replacing the pixels or grids where is cloud coverage, no decision, or lack of satellite observation, by NISE's effective terrestrial identification results. For some water and land boundaries, there still may be a small amount of cloud coverage or no observation data area that can’t be replaced due to the low spatial resolution of NISE product. Blended daily snow cover product achieves about 91% average coincidence rate of snow and non-snow identification compared to ground-based snow depth observation in years. The dataset is stored in the standard HDF4 files each having two SDSs of snow cover and quality code with the dimensions of 4100-column and 2400-line. Complete attribute descriptions is written in them.

2、Keywords

Theme：Others,Snow,Snowpack
Discipline：Remote Sensing Technology,Cryosphere
Places：Tibetan Plateau, The Third Pole
Time：1995-2018, 1995, 2018

3、Data details

1.Scale：500000

2.Projection：

3.Filesize：4079.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：41.0 | - |
| west：65.0 | - | east：106.0 |
| - | south：17.0 | - |

5、Time frame:1995-10-18 08:00:00+00:00--2019-01-17 08:00:00+00:00

6、Reference method

References to data:

CAO Guangzhen, ZHENG Zhaojun. Snow cover dataset based on multi-source remote sensing products blended with 1km spatial resolution on the Qinghai-Tibet Plateau (1995-2018). A Big Earth Data Platform for Three Poles, doi:10.11888/Snow.tpdc.2701022019

References to articles:

7、Supporting project information

Database construction of climate and ecological environment parameters on the Qinghai-Tibet Plateau

8、Data resource provider

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