A Big Earth Data Platform for Three Poles

**MODIS daily cloud-free factional snow cover data set for Asian water tower area (2000-2022)**

1、Description

The Asian water tower region, with the Qinghai-Tibet Plateau as the core, is the most widely distributed snow area on Earth except for the North and South Poles. The topographic heterogeneity of the Asian water tower region is great, and the snow in the region shows a thin snow layer and large patchy distribution, resulting in the high time-varying characteristics of the snow in the region, so there is an urgent need for daily-scale dynamic monitoring data of snow cover. This dataset is based on the MODIS global surface reflectance product, MO/YD09GA, using the Multiple Endmember Spectral Mixture Analysis- Automatic-selected Endmembers (MESMA -AGE) and interpolation algorithm based on spatial and temporal information to construct a MODIS day-by-day cloud-free snow cover dataset for the Asian water tower region from 2000 to 2020. With high spatial resolution Landsat images as “ground truth”, the root mean square error is 0.14, which is better than the two snow datasets MODSCAG and MOD10A1 commonly used internationally. The time series of this dataset is from February 26, 2000 to March 31, 2020, which can provide quantitative spatial distribution information of snowpack for mountain hydrological models, land surface models, and numerical weather forecasts.

2、Keywords

Theme：Snow,Daily snow cover
Discipline：Cryosphere
Places：Asian water tower area
Time：2000-2022, Daily

3、Data details

1.Scale：None

2.Projection：

3.Filesize：57446.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：54.0 | - |
| west：60.0 | - | east：106.0 |
| - | south：24.0 | - |

5、Time frame:2000-02-25 16:00:00+00:00--2022-05-21 03:59:59+00:00

6、Reference method

References to data:

WANG Gongxue , PAN Jinmei, ZHANG Cheng , SHI Jiancheng, PAN Fangbo , JIANG Lingmei. MODIS daily cloud-free factional snow cover data set for Asian water tower area (2000-2022). A Big Earth Data Platform for Three Poles, doi:10.11888/Cryos.tpdc.2725032022

References to articles:

7、Supporting project information

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8、Data resource provider

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