A Big Earth Data Platform for Three Poles

**Daily cloudless MODIS Snow area ratio data set of the QTP (2000-2015)**

1、Description

The daily cloudless MODIS Snow area ratio data set (2000-2015) of the Qinghai Tibet Plateau is based on MODIS daily snow product - mod10a1, which is obtained by using a cloud removal algorithm based on cubic spline interpolation.
The data set is projected by UTM with spatial resolution of 500m, providing daily snow cover FSC results in the Tibetan Plateau. The data set is a day-to-day document, from 24 February 2000 to 31 December 2015. Each file is the result of snow area proportion on that day, the value is 0-100%, which is envi standard file, the naming rule is: yyyddd\_fsc\_0.5km.img, where yyyy represents the year, DDD represents Julian day (001-365 / 366). Files can be opened and viewed directly with envi or ArcMap.
The original MODIS Snow data product for cloud removal comes from the mod10a1 product processed by the National Snow and Ice Data Center (NSIDC). This data set is in the format of HDF and uses the sinusional projection.
The attributes of the daily cloudless MODIS Snow area ratio data set (2000-2015) on the Qinghai Tibet Plateau consist of the spatial-temporal resolution, projection information and data format of the data set.
Temporal and spatial resolution: the temporal resolution is day by day, the spatial resolution is 500m, the longitude range is 72.8 ° ~ 106.3 ° e, and the latitude is 25.0 ° ~ 40.9 ° n.
Projection information: UTM projection.
Data format: envi standard format. File naming rules: "yyyyddd" + ". Img", where yyyy stands for year, DDD stands for Julian day (001-365 / 366), and ". Img" is the file suffix added for easy viewing in ArcMap and other software. For example, 2000055 ﹐ FSC ﹐ 0.5km.img represents the result on the 55th day of 2000. The envi file of this data set is composed of header file and body content. The header file includes row number, column number, band number, file type, data type, data record format, projection information, etc.; take 2000055 ﹣ FSC ﹣ 0.5km.img file as an example, the header file information is as follows:
ENVI
Description = {envi file, created [sat APR 27 18:40:03 2013]}
Samples = 5760
Lines = 3300
Bands = 1
Header offset = 0
File type = envi standard
Data type = 1: represents byte type
Interleave = BSQ: data record format is BSQ
Sensor type = unknown
Byte order = 0
Map Info = {UTM, 1.500, 1.500, - 711320.359, 4526650.881, 5.0000000000e + 002, 5.0000000000e + 002, 45, north, WGS-84, units = meters}
Coordinate system string = {projcs ["UTM [u zone [45N], geocs [" GCS [WGS [1984], data ["d [WGS [1984", organization ID ["WGS [1984", 6378137.0298.257223563]], prime ["Greenwich", 0.0], unit ["degree", 0.01745532925199433]]] project ["transfer [Mercator"]] parameter ["false [easting", 500000.0], parameter ["false [easting", 500000.0], parameter [500000.0], parameter [500000.0], parameter [false [false [easting ", 500000.0], parameter], parameter [500000.0], parameter [500000.0], parameter [500000.0], parameter [false [easting", 500000.0], parameter [500000.0], parameter [500000.0], parameter [500000.0], parameter ["false\_northing", 0.0], parameter ["central\_meridian", 87.0], parameter ["scale" \_Factor ", 0.9996], parameter [" latitude ﹣ of ﹣ origin ", 0.0], unit [" meter ", 1.0]]}
Wavelength units = unknown, band names = {2000055}

2、Keywords

Theme：Snow area,Snow,Snowpack
Discipline：Cryosphere
Places：Tibetan Plateau
Time：2000-2015

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：82738.4MB

4.Data format：ENVI Standard

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：40.9 | - |
| west：72.8 | - | east：106.3 |
| - | south：25.0 | - |

5、Time frame:2000-03-14 19:00:00+00:00--2016-01-19 08:00:00+00:00

6、Reference method

References to data:

WANG Jian, TANG Zhiguang. Daily cloudless MODIS Snow area ratio data set of the QTP (2000-2015). A Big Earth Data Platform for Three Poles, doi:10.3972/westdc.024.2013.db2019

References to articles:

Zhiguang Tang, Jian Wang, Hongyi Li, Ji Liang, Chaokui Li, Xin Wang. Extracting and assessment of snowline altitude over the Tibetan Plateau using MODIS fractional snow cover data (2001-2013)，Journal of Applied Remote Sensing，2014，8（1）：084689.

Zhiguang Tang, Xiaoru Wang, Jian Wang，Xin Wang，Hongyi Li，Zongli Jiang. Spatiotemporal Variation of Snow Cover in Tianshan Mountains, Central Asia, Based on Cloud-Free MODIS Fractional Snow Cover Product, 2001–2015, Remote Sensing, 2017, 9 (10): 1045.

Zhiguang Tang; Jian Wang; Hongyi Li; Lili Yan. Spatiotemporal changes of snow cover over the Tibetan plateau based on cloud-removed moderate resolution imaging spectroradiometer fractional snow cover product from 2001 to 2011. Journal of Applied Remote Sensing, 2013, 7(1): 073582

7、Supporting project information

National Nature Science Foundation of China

8、Data resource provider

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