A Big Earth Data Platform for Three Poles

**A permafrost thermal type map on the Tibetan Plateau (2000-2010)**

1、Description

The past frozen soil map of the Tibetan Plateau was based on a small number of temperature station observations and used a classification system based on continuity. This data set used the geographically weighted regression model (GWR) to synthesize MODIS surface temperature, leaf area index, snow cover ratio and multimodel soil moisture forecast products of the National Meteorological Information Center through spatiotemporal reconstruction. In addition, precipitation observations of more than 40 meteorological stations, the precipitation products of FY2 satellite observations and the multiyear average temperature observation data of 152 meteorological stations from 2000 to 2010 were integrated to simulate the average temperature data of the Tibetan Plateau, and the permafrost thermal condition classification system was used to classify permafrost into several types: Very cold, Cold, Cool, Warm, Very warm, and Likely thawing. The map shows that, after deducting lakes and glaciers, the total area of permafrost on the Tibetan Plateau is approximately 1,071,900 square kilometers. Verification shows that this map has higher accuracy. It can provide support for future planning and design of frozen soil projects and environmental management.

2、Keywords

Theme：Temperature,Ground temperature,Frozen Ground  
Discipline：Atmosphere,Cryosphere  
Places：Tibetan Plateau   
Time：2010, 2000-2010, 2000

3、Data details

1.Scale：250000

2.Projection：

3.Filesize：20.0MB

4.Data format：PDF

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：40.0 | - |
| west：73.0 | - | east：105.0 |
| - | south：26.0 | - |

5、Time frame:2000-01-11 03:08:59+00:00--2011-01-10 03:08:59+00:00

6、Reference method

References to data:

LI Xin, RAN Youhua. A permafrost thermal type map on the Tibetan Plateau (2000-2010). A Big Earth Data Platform for Three Poles, doi:10.11888/GlaciolGeocryol.tpe.0000017.file2018

References to articles:

Ran, Y.H., Li, X., & Cheng, G.D. (2018). Climate warming over the past half century has led to thermal degradation of permafrost on the qinghai–tibet plateau. The Cryosphere, 12(2), 595-608.

7、Supporting project information

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

8、Data resource provider

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