A Big Earth Data Platform for Three Poles

**Geocryological regionalization and classification map of the frozen soil in China (1:10,000,000) (2000)**

1、Description

These data are digitized for the Geocryological Regionalization and Classification Map of the Frozen Soil in China (1:10 million) (Guoqing Qiu et al., 2000; Youwu Zhou et al., 2000), adopting a geocryological regionalization and classification dual series system. The geocryological regionalization system and classification system are used on the same map to reflect the commonality and individuality of the formation and distribution of frozen soil at each level.
 The geocryological regionalization system consists of three regions of frozen soil: (1) the frozen soil region of eastern China; (2) the frozen soil region of northwestern China; and (3) the frozen soil region of southwestern China (Tibetan Plateau). Based on the three large regions, 16 regions and several subregions are further divided. In the division of the geocryological boundary in the frozen soil area, the boundary between major regions I and III mainly consults the results of Bingyuan Li (1987). The boundary between major regions II and III is the northern boundary of the Tibetan Plateau, which is the Kunlun Mountains-Altun Mountains-Northern Qilian Mountains and the piedmont line. The boundary between major regions I and II is in the area of Helan Mountain-Langshan Mountain. The boundary of the secondary region is divided by the geomorphological conditions in regions II and III. However, in region I, it is mainly divided by the ratio of the annual temperature range A to the annual mean temperature T, and the frozen depths of various regions are taken into consideration.
The classification system is divided into 8 types based on the continuity of frozen soil, the time of existence of frozen soil and the seasonal frozen depth. The various classifications of boundaries are mainly taken from the "Map of Snow, Ice and Frozen Ground in China" (1:4 million) (Yafeng Shi et al., 1988) and consult some new materials, whereas the seasonal frozen soil boundary is mainly based on the weather station data. The definitions of each classification are as follows:
(1) Large permafrost: the continuous coefficient is 90%-70%;
(2) Large-island permafrost: the continuous coefficient is 70%-30%;
(3) Sparse island-shaped permafrost: the continuous coefficient is <30%;
(4) Permafrost in the mountains;
(5) Medium-season seasonal frozen soil: the maximum seasonal frozen depth that can be reached is >1 m;
(6) Shallow seasonal frozen soil: the maximum seasonal frozen depth that can be reached is <1 m;
(7) Short-term frozen soil: less than one month of storage time; and
(8) Nonfrozen soil.
According to the data, China's permafrost areas sum to approximately 2.19 × 106 km², accounting for 22.83% of China's territory. Among those areas, the mountain permafrost is found over 0.42×106 km2, which is 4.39% of the territory of China. The seasonal frozen soil area is approximately 4.76×106 km², accounting for 49.6% of China's territory, and the instantaneous frozen soil area is approximately 1.86×106 km², i.e., 19.33% of China's territory.
For more information, please see the references (Youwu Zhou et al., 2000).

2、Keywords

Theme：Frozen ground distribution,Seasonally frozen ground,Frozen Ground
Discipline：Cryosphere
Places：China
Time：2000

3、Data details

1.Scale：10000000

2.Projection：Albers

3.Filesize：1.48MB

4.Data format：shp

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：53.9 | - |
| west：73.2 | - | east：135.5 |
| - | south：17.8 | - |

5、Time frame:2000-07-23 08:00:00+00:00--2001-07-23 08:00:00+00:00

6、Reference method

References to data:

ZHOU Youwu, GUO Dongxin, QIU Guoqing. Geocryological regionalization and classification map of the frozen soil in China (1:10,000,000) (2000). A Big Earth Data Platform for Three Poles, doi:10.11888/Geocry.tpdc.2700372011

References to articles:

Li, X., Cheng, G.D., Jin, H.J., Kang, E.S., Che, T., Jin, R., Wu, L.Z., Nan, Z.T., Wang, J., & Shen, Y.P. (2008). Cryospheric Change in China. Global and Planetary Change, 62(3-4), 210-218.

7、Supporting project information

8、Data resource provider

name: GUO Dongxin
unit:
email:

name: ZHOU Youwu
unit:
email:

name: QIU Guoqing
unit:
email: