A Big Earth Data Platform for Three Poles

**Distribution data of freezing (thawing) depth in Sichuan Tibet engineering corridor (2001-2100)**

1、Description

Based on gipl1.0 permafrost spatial distribution model, combined with the existing basic data, including climate change, soil types, and vegetation data, the permafrost and seasonal permafrost characteristics of Sichuan Tibet railway are simulated. The data result is 500m spatial resolution grid, including the maximum depth of permafrost and the maximum freezing depth of seasonal permafrost. The results are verified by drilling data. The data date is 2001-20192041-20602081-2100 (20-year average), in which the water body and glacier area are excluded from the calculation range through the mask (null value). The climate data is monthly mean, other data remain unchanged in the process of simulation, and the spatial resolution is 500m. Data sources and "woeldc" lim:https :// www.worldclim.org/ , DEM and vegetation soil: https://data.tpdc.ac.cn/zh-hans/ ”According to the characteristics of different data sources, the authenticity and consistency of the original data are checked and standardized; The permafrost model is used to simulate the permafrost and seasonal frozen soil. The output results are ground temperature and active layer (maximum frozen depth). The simulation results are verified with the borehole ground temperature. Finally, the spatial data set is mapped by ArcGIS. Make digital processing operation standard. In the process of processing, the operators are required to strictly abide by the operation specifications, and the special person is responsible for the quality review. The data integrity, logical consistency, position accuracy, attribute accuracy, edge connection accuracy and current situation are all in line with the requirements of relevant technical regulations and standards formulated by the State Bureau of Surveying and mapping. The data can provide necessary data support for the later research on the freezing (thawing) depth of the corridor of Sichuan Tibet project.

2、Keywords

Theme：Permafrost degradation,Frozen Ground
Discipline：Others,Cryosphere
Places：Along the Sichuan Tibet Railway
Time：2001-2100

3、Data details

1.Scale：1000000

2.Projection：GCS\_China\_Geodetic\_Coordinate\_System\_2000

3.Filesize：19.6MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：33.28 | - |
| west：89.12 | - | east：103.07 |
| - | south：27.84 | - |

5、Time frame:None--None

6、Reference method

References to data:

YIN Guoan. Distribution data of freezing (thawing) depth in Sichuan Tibet engineering corridor (2001-2100). A Big Earth Data Platform for Three Poles, doi:10.11888/Geocry.tpdc.2712832021

References to articles:

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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