A Big Earth Data Platform for Three Poles

**Glacier thickness data in the third polar region (2018-2021)**

1、Description

Glacier thickness is the vertical distance between the glacier surface and the glacier bottom. The distribution of glacier thickness is not only controlled by glacier scale and subglacial topography, but also varies with different stages of glacier response to climate. The data include longitude and latitude, elevation, single point thickness, total ice reserves and instrument type of glacier survey line.  
The glacier thickness mainly comes from drilling and ground penetrating radar (GPR). The drilling method is to drill holes on the ice surface to the bedrock under the ice, so as to obtain the thickness of the glacier at a single point; Glacier radar thickness measurement technology can accurately measure the continuous distribution of glacier thickness on the survey line, and obtain the topographic characteristics of subglacial bedrock, so as to provide necessary parameters for the estimation of glacier reserves and the study of glacier dynamics  
The accuracy of glacier drilling data reaches decimeter level. The accuracy of thickness measurement by GPR radar is between 5% and 15% in theory due to the difference of glacier properties and radar signal strength of bottom interface.  
Glacier thickness is a prerequisite for obtaining information of subglacial topography and glacier reserves. In the numerical simulation and model study of glacier dynamics, glacier thickness is an important basic input parameter. At the same time, glacier reserve is the most direct parameter to characterize glacier scale and glacier water resources. It is not only very important for accurate assessment, reasonable planning and effective utilization of glacier water resources, but also has important and far-reaching significance for regional socio-economic development and ecological security.

2、Keywords

Theme：Glacier thickness,Glacier change,Glaciers,Glacier(Ice Sheet)  
Discipline：Cryosphere  
Places：Third Pole, Tianshan mountain, Tibet  
Time：2018-2021

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.01MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：49.12 | - |
| west：74.82 | - | east：101.83 |
| - | south：29.3 | - |

5、Time frame:2018-03-14 16:00:00+00:00--2021-05-24 03:59:59+00:00

6、Reference method

References to data:

WU Guangjian. Glacier thickness data in the third polar region (2018-2021). A Big Earth Data Platform for Three Poles, doi:10.11888/Glacio.tpdc.2713322021

References to articles:

7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program

8、Data resource provider

name: WU Guangjian  
unit: Institute of Tibetan Plateau Research, Chinese Academy of Sciences  
email: wugj@itpcas.ac.cn