A Big Earth Data Platform for Three Poles

**Inter-decadal and inter-annual thickness change dataset of Yanong Glacier**

1、Description

Glacier thickness variation is a key parameter for glacier change monitoring. Historical high-resolution KH-9 images (1974), SRTM DEM data products (2000), TanDEM-X dual-station interferometric SAR data (2011-2014) and SPOT-7 images (2015) data were used to generate multi-temporal digital elevation models of the Yanong Glacier in southeastern Tibet based on optical photogrammetry and radar interferometry techniques, respectively. For the TanDEM-X radar data, the geometric positioning errors in the glacier area were removed during the data processing, and the outliers in the snow cover area in the KH-9 DEM were removed. Subsequently, the inter-decadal and inter-annual thickness variation datasets of Yalong glacier during 1975-2015 were finally generated after X-band and C-band radar wave penetration depth corrections. The spatial resolution of this data set is 30m, which can be further used for calibration of glacier evolution model parameters and analysis of glacier future changes.

2、Keywords

Theme：Glacier elevation change,Glacier(Ice Sheet)  
Discipline：Cryosphere  
Places：Yanong  
Time：

3、Data details

1.Scale：None

2.Projection：

3.Filesize：35.64MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：29.47 | - |
| west：96.41 | - | east：96.87 |
| - | south：29.16 | - |

5、Time frame:None--None

6、Reference method

References to data:

ZHOU Yushan , ZHENG Donghai, LI Xin, LI Zhiwei . Inter-decadal and inter-annual thickness change dataset of Yanong Glacier. A Big Earth Data Platform for Three Poles, doi:10.11888/Cryos.tpdc.2722752022

References to articles:

Zhou, Y., Li, X., Zheng, D., Li, Z. (2022). Evolution of geodetic mass balance over the largest lake-terminating glacier in the Tibetan Plateau with a revised radar penetration depth based on multi-source high-resolution satellite data. Remote Sensing of Environment, 275, 113029.

7、Supporting project information

8、Data resource provider

name: LI Xin  
unit:   
email: xinli@itpcas.ac.cn  
  
name: ZHENG Donghai  
unit:   
email: zhengd@itpcas.ac.cn  
  
name: ZHOU Yushan   
unit: Institute of Tibetan Plateau Research, CAS  
email: yszhou@itpcas.ac.cn  
  
name: LI Zhiwei   
unit: Central South University  
email: zwli@csu.edu.cn