A Big Earth Data Platform for Three Poles

**Geodetic glacier-averaged mass changes in the Mt.Xixabangma area in 1974-2000 and 2000-2017 （V1.0)**

1、Description

The data set involved geodetic annual glacier-averaged mass balance and mass change data atMt.Xixiabangma areasin the Himalayas from 1974 to 2017. It is stored in the ESRI vector polygon format and is composed of two periods, which includes surface elevation difference between 1974-2000 (DH1974-2000, from KH-9 DEM1974 and SRTM DEM2000), surface elevation difference between 2000-2017(DH2000-2017, by DinSAR techniquesfrom SRTM DEM2000 and TSX/TDX data in 2017). KH-9 DEM is a DEM of the study area in 1974, which was generated from three scenes of optical stereo pairs from KH-9. Geodetic glacier mass change was calculated by DH above, glacier cover vector data from TPG1976/CGI2/RGI6.0 with ice density of 850 ± 60 kg m−3. The attribute data included: GLIMSId means the glacier code from GLIMS data base, Area（km2）is the glacier area by km2, area\_m2 is glacier area by (m2）, the glacier name, EC74\_2000, the surface elevation change rate from 1974 to 2000(m a-1), EC00\_2017, the surface elevation change rate from 2000 to 2017 (m a-1), MB74\_2000, the geodetic glacier mass balance between 1974 and 2000（m w.e. a-1），MB00\_2017, the geodetic glacier mass balance between 2000 and 2017（m w.e. a-1）.MC74\_2000, the geodetic glacier mass change from 1974 to 2000 (m3w.e. a-1), MC00\_2017, the geodetic glacier mass change from 2000 to 2017(m3 w.e. a-1). Ut\_EC74\_00 is the uncertainty of glacier surface elevation change（m a-1） in 1974-2000、Ut\_MB74\_00, is the uncertainty of glacier mass balance for each glacier（m w.e. a-1）in 1974-2000，Ut\_MC74\_00, is the uncertainty of glacier mass change for each glacier（m3w.e. a-1）in 1974-2000. Ut\_EC00\_17，is the uncertainty of glacier surface elevation change in 2000-2017（m a-1），Ut\_MB00\_17，is the uncertainty of glacier mass balance for each glacier in 2000-2017（m w.e. a-1），Ut\_MC00\_17 is the uncertainty of glacier mass change for each glacier in 2000-2017（m3 w.e. a-1）.This data set is used for the study glaciers melting and its hydrological effects in the Central Himalayas.It also could be used in studies of climatic change and disasters research in the Himalayas.

2、Keywords

Theme：Ice reserves,Mass balance,Glacier(Ice Sheet)
Discipline：Cryosphere
Places：Pan-third pole, Xixiabangma, Qinghai-Tibet Plateau
Time：1974-2000；2000-2017

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.25MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：28.3 | - |
| west：86.5 | - | east：87.0 |
| - | south：27.5 | - |

5、Time frame:1974-11-11 16:00:00+00:00--2017-01-20 16:00:00+00:00

6、Reference method

References to data:

YE Qinghua. Geodetic glacier-averaged mass changes in the Mt.Xixabangma area in 1974-2000 and 2000-2017 （V1.0). A Big Earth Data Platform for Three Poles, doi:10.11888/Glacio.tpdc.2707542020

References to articles:

Ye, Q., Bolch, T., Naruse, R., Wang, Y., Zong, J., Wang, Z., Zhao, R., Yang, D., & Kang, S. (2015). Glacier mass changes in Rongbuk catchment on Mt. Qomolangma from 1974 to 2006 based on topographic maps and ALOS PRISM data. Journal of Hydrology, 530, 273–280. doi:10.1016/j.jhydrol.2015.09.014

叶庆华, 程维明, 赵永利, 宋继彪, 赵瑞. (2016). 青藏高原冰川变化遥感监测研究综述. 地球信息科学学报,18(7), 920-930.

聂维. (2019). 喜马拉雅中段典型冰川面积-储量变化的多源遥感监测及南北坡对比研究. 硕士学位论文. 中国科学院青藏高原研究所.中国科学院大学, 北京.

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: YE Qinghua
unit: Institute of Tibetan Plateau Research, Chinese Academy of Sciences
email: yeqh@itpcas.ac.cn