A Big Earth Data Platform for Three Poles

**Geodetic Glacier mass changes in Naimo'Nanyi area in 1974-2000 and 2000-2013 （V1.0)**

1、Description

The data involved two periods of geodetic glacier mass storage change of Naimona’Nyi glaciers in the western of Himalaya from 1974-2013 (unit: m w.e. a-1). It is stored in the ESRI vector polygon format. The data sets are composed of two periods of glacier surface elevation difference between 1974-2000 and 2000-2013, i.e. DHSRTM2000-DEM1974（DH2000-1974）、DHTanDEM2013-SRTM2000（DH2013-2000）. DH2000-1974 was surface elevation change between SRTM2000 and DEM1974, i.e. the earlier historical DEM (DEM1974, spatial resolution 25m) was derived from 1:50,000 topographic maps in October 1974(DEM1974,spatial resolution 25m). The uncertainty in the ice free areas of DH2000-1974 was ±0.13 m a-1. The surface elevation difference between 2000-2013 (DH2000-2013, by DinSAR techniques from SRTM DEM2000 and TSX/TDX data on Oct.17th in 2013) The uncertainty in the ice free areas of DH2013-2000 was ±0.04 m a-1. Glacier-averaged annual mass balance change (m w.e.a-1) was averaged annually for each glacier, which was calculated by DH2000-1974/DH2013-2000, glacier coverage area and ice density of 850 ± 60 kg m−3. The attribute data includes Glacier area by Shape\_Area (m2), EC74\_00, EC00\_13, i.e. Glacier-averaged surface elevation change in 1974-2000 and 2000-2013(m a-1), MB74\_00, MB00\_13 i.e. Glacier-averaged annual mass balance in 1974-2000 and 2000-2013 (m w.e.a-1), and MC74\_00, MC00\_13, Glacier-averaged annual mass change in 1974-2000 and 2000-2013 (m3 w.e.a-1), Uncerty\_MB, is the uncertainty of glacier-averaged annual mass balance（m w.e. a-1）， Uncerty\_MC, is the Maximum uncertainty of glacier-averaged annual mass change（m3 w.e. a-1）. The data sets could be used for glacier change, hydrological and climate change studies in the Himalayas and High Mountain Asia.

2、Keywords

Theme：Ice reserves,Mass balance,Glacier(Ice Sheet)  
Discipline：Cryosphere  
Places：Qinghai-Tibet Plateau, Naimo'Nanyi  
Time：1974-2000；2000-2013

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.25MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：30.5 | - |
| west：81.2 | - | east：81.5 |
| - | south：30.3 | - |

5、Time frame:1974-11-29 00:00:00+00:00--2013-10-23 11:59:59+00:00

6、Reference method

References to data:

YE Qinghua. Geodetic Glacier mass changes in Naimo'Nanyi area in 1974-2000 and 2000-2013 （V1.0). A Big Earth Data Platform for Three Poles, doi:10.11888/Glacio.tpdc.2707522020

References to articles:

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.  
  
宗继彪. (2015). 基于星-地多源数据的珠峰地区和纳木那尼峰地区冰川冰储量变化研究. 博士学位论文. 中国科学院青藏高原研究所.中国科学院大学, 北京.  
  
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

7、Supporting project information

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

8、Data resource provider

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