A Big Earth Data Platform for Three Poles

**Ice Flow Velocity Data Set of Typical Surging Glaciers in Greenland Ice Sheet Based on Multi-source Satellite Remote Sensing (1985-2020)**

1、Description

Glaciers are sensitive to climate change. With global warming, the melting of glaciers continues to accelerate all over the world. Surging glaciers are glaciers with intermittent and periodic acceleration, which is a sensitive indicator of climate change. Based on Landsat and Sentinel satellite images from 1980s to 2020, the study area images were obtained by filtering, stitching, and cropping. Among them, the L1GS level images collected by Landsat TM sensor were geo-registered using a second-order polynomial, and the error of the geo- registered images was less than one pixel. After image template matching with an orientation correlation algorithm, this data set provides the surface ice flow velocity of a typical surging glacier in the Greenland ice sheet, Sortebræ Glacier in different period from 1980s to 2020. It is expected to contribute to the research on the surging process of Sortebræ Glacier and the discussion on the mechanism of glacier surging in the context of global warming.

2、Keywords

Theme：Cryosphere remote sensing products,Surface Freeze-thaw Cycle/state Remote Sensing,Glacial velocity,Glacier(Ice Sheet)
Discipline：Cryosphere
Places：Greenland
Time：1985-2020

3、Data details

1.Scale：None

2.Projection：

3.Filesize：11.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：70.0 | - |
| west：26.0 | - | east：28.0 |
| - | south：68.0 | - |

5、Time frame:1985-03-26 16:00:00+00:00--2020-04-09 03:59:59+00:00

6、Reference method

References to data:

QIAO Gang , SUN Zixiang , YUAN Xiaohan . Ice Flow Velocity Data Set of Typical Surging Glaciers in Greenland Ice Sheet Based on Multi-source Satellite Remote Sensing (1985-2020). A Big Earth Data Platform for Three Poles, doi:10.11888/Cryos.tpdc.2728772022

References to articles:

7、Supporting project information

CASEarth:Big Earth Data for Three Poles（grant No. XDA19070000）

8、Data resource provider

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