A Big Earth Data Platform for Three Poles

**Ice crack dataset of Antarctican and Greenland V1.0 (2015-2019)**

1、Description

Based on the sentinel-1 hyperspectral wide-band SAR data, using the proposed u-net ice fissure detection method, the ice fissure elevation data of the north and south polar ice sheet are formed. Firstly, the data preprocessing of sentinel-1 hyperspectral wide-band SAR includes radiometric calibration, ice cover range determination and speckle noise removal. In order to suppress the speckle noise of SAR data, and to ensure the ice fracture characteristics, we use ppb method to remove multiplicative noise. This method can not only effectively remove spots, but also retain the characteristics of ice cracks. Secondly, we use the u-net based ice crack detection algorithm to extract ice cracks. In order to obtain the correct ice fracture SAR data samples, we select the SAR samples by comparing the high-resolution optical data of ice fracture to form the ice fracture SAR data samples. Based on the SAR data of ice fracture area and non ice fracture area, we use u-net method to extract ice fracture. Finally, we geocode the detected ice fracture data to form the ice fracture products of the north and south polar.

2、Keywords

Theme：Glacier(Ice Sheet)  
Discipline：Cryosphere  
Places：Antarctican and Greenland  
Time：2015-2019

3、Data details

1.Scale：None

2.Projection：

3.Filesize：4048.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：90.0 | - |
| west：-90.0 | - | east：90.0 |
| - | south：-90.0 | - |

5、Time frame:2015-11-07 16:00:00+00:00--2019-02-06 16:00:00+00:00

6、Reference method

References to data:

Liang Lei. Ice crack dataset of Antarctican and Greenland V1.0 (2015-2019). A Big Earth Data Platform for Three Poles, doi:10.11888/Glacio.tpdc.2709842019

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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