A Big Earth Data Platform for Three Poles

**Scatterometer ice sheet freeze-thaw data in Antarctica and Greenland (2015-2019) v1.0**

1、Description

The coverage time of microwave scatterometer ice sheet freeze-thaw data is updated to 2015-2019, with a spatial resolution of 4.45km. The time resolution is day by day, and the coverage range is the polar ice sheet. The remote sensing inversion method based on microwave radiometer considers the change of snow cover characteristics in space-time and space. Firstly, the DVPR time series data of scatterometer data is extracted, the high time resolution of scatterometer data is effectively used, and the influence of terrain is removed by channel difference. Then, the variance value of time series at each sampling point is simulated by generalized Gaussian model, so as to make the region. The generalized Gaussian model needs less input parameters than the traditional double Gaussian model, and the obtained threshold is also unique. Finally, the moving window segmentation algorithm is used to accurately find the melting start time, end time and duration of the wet snow point, which can effectively remove the temperature mutation in the melting or non melting period. The impact. The data of long time series microwave scatterometer are from QSCAT and ASCAT. The verification of the measured stations shows that the detection accuracy of ice sheet freezing and thawing is over 70%. The data is stored in a bin file every day. Each file of Antarctic freeze-thaw data based on microwave scatterometer is composed of 810 \* 680 grid, and each file of Greenland ice sheet freeze-thaw data is composed of 810 \* 680 grid (0 value: non melting area, 1 Value: melting area).

2、Keywords

Theme：Ice sheet freeze-thaw,Glacier(Ice Sheet)
Discipline：Cryosphere
Places：Antarctica and Greenland
Time：2015-2019

3、Data details

1.Scale：None

2.Projection：

3.Filesize：1024.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：90.0 | - |
| west：-180.0 | - | east：180.0 |
| - | south：-90.0 | - |

5、Time frame:2015-01-09 16:00:00+00:00--2019-02-09 03:59:59+00:00

6、Reference method

References to data:

Liang Lei. Scatterometer ice sheet freeze-thaw data in Antarctica and Greenland (2015-2019) v1.0. A Big Earth Data Platform for Three Poles, doi:10.11888/Glacio.tpdc.2709212019

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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