A Big Earth Data Platform for Three Poles

**Observation of the 2017 Calving Event at the Petermann Glacier in Greenland (2017)**

1、Description

Both a decrease of sea ice and an increase of surface meltwater, which may induce ice-flow speedup and frontal collapse, have a significant impact on the stability of the floating ice shelf in Greenland. However, detailed dynamic precursors and drivers prior to a fast-calving process remain unclear due to sparse remote sensing observations. Here, we present a comprehensive investigation on hydrological and kinematic precursors before the calving event on 26 July 2017 of Petermann Glacier in northern Greenland, by jointly using remote sensing observations at high-temporal resolution and an ice-flow model. Time series of ice-flow velocity fields during July 2017 were retrieved with Sentinel-2 observations with a sub-weekly sampling interval. The ice-flow speed quickly reached 30 m/d on 26 July (the day before the calving), which is roughly 10 times quicker than the mean glacier velocity.

2、Keywords

Theme：Glacial velocity,Glacier(Ice Sheet)  
Discipline：Cryosphere  
Places：Greenland  
Time：2017

3、Data details

1.Scale：None

2.Projection：WGS84

3.Filesize：51.6MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：81.0 | - |
| west：-62.0 | - | east：-59.0 |
| - | south：79.0 | - |

5、Time frame:2017-07-07 16:00:00+00:00--2017-08-24 16:00:00+00:00

6、Reference method

References to data:

JIANG Liming . Observation of the 2017 Calving Event at the Petermann Glacier in Greenland (2017). A Big Earth Data Platform for Three Poles, doi:https://doi.org/10.3390/ rs130405912022

References to articles:

Li, D., Jiang, L., & Huang, R. (2021). Hydrological and Kinematic Precursors of the 2017 Calving Event at the Petermann Glacier in Greenland Observed from Multi-Source Remote Sensing Data. Remote Sens, 13, 591. https://doi.org/10.3390/ rs13040591

7、Supporting project information

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

8、Data resource provider

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