A Big Earth Data Platform for Three Poles

**Data products of early ice velocity field of Rayner Glacier, East Antarctica (1963.08.29-1963.10.29)**

1、Description

The data product of ice flow velocity field of Rayner Glacier in East Antarctica in 1963 based on ARGON historical remote sensing images. Using two declassified satellite images taken in 1963 with an interval of two months, the early ice flow velocity field of the Reina Glacier in eastern Antarctica is estimated by hierarchical matching based on parallax decomposition. The accuracy of the estimated velocity map can reach 70 m/year. A method for estimating the surface velocity of cooperative glaciers based on the parallax decomposition of optical stereo images. First, the image to be matched generates the core image and the pyramid of the core image; Next, the ice flow area mask is used to divide the image into ice flow area and non ice flow area for matching respectively. In addition to the normal matching steps, the ice flow area also needs to perform parallax demarcation to distinguish the impact of ice flow movement on terrain parallax. Finally, through layer by layer matching, we can get the DTM and ice flow diagram of the object side at the bottom. This data is of great significance for reconstructing the early surface morphology and ice flow velocity of Rayner Glacier in East Antarctica.

2、Keywords

Theme：Glacial velocity,Glacier(Ice Sheet)
Discipline：Cryosphere
Places：Antarctic
Time：1963.08.29-1963.10.29

3、Data details

1.Scale：None

2.Projection：South\_Pole\_Stereographic

3.Filesize：1.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：-67.1 | - |
| west：46.3 | - | east：34.0 |
| - | south：-68.5 | - |

5、Time frame:None--None

6、Reference method

References to data:

YE Wenkai , QIAO Gang , LI Rongxing . Data products of early ice velocity field of Rayner Glacier, East Antarctica (1963.08.29-1963.10.29). A Big Earth Data Platform for Three Poles, doi:https://doi.org/10.14358/PERS.83.7.4772022

References to articles:

Ye, W., Qiao, G.\*, Kong, F., Ma, X., Tong, X., & Li, R. (2017). Improved geometric modeling of 1960s KH-5 ARGON satellite images for regional Antarctica applications. Photogrammetric Engineering & Remote Sensing, 83(7), 477-491. https://doi.org/10.14358/PERS.83.7.477

7、Supporting project information

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

8、Data resource provider

name: YE Wenkai
unit: Tongji University
email: yewenkai1990@gmail.com

name: LI Rongxing
unit: Tongji University
email: rli@tongji.edu.cn

name: QIAO Gang
unit: Tongji University
email: qiaogang@tongji.edu.cn