A Big Earth Data Platform for Three Poles

**The Datasets of the SRTM C/X-Band Radar Penetration Depth Differences on 1°×1° grid of High Mountain Asia Glaciers (2000)**

1、Description

Radar penetration correction is essential for accurately estimating glacier mass balance when using the geodetic methods based on the radar-derived Digital Elevation Model (DEM). Due to heterogeneous snow distribution and snowpack properties, the radar penetration depth varies by region and is basically dependent on the altitudes. Therefore, this data set gives the result of the penetration depth difference of SRTM C/X-band radar on 1°×1° grid of High Mountain Asia Glaciers. The data set contains 214 1°×1° grids SRTM X-band and C-band penetration depth difference in HMA, and a linear fitting expression for each grid. According to the geodetic method, the 30 m SRTM X-band and C-band DEM are used to obtain the results of the penetration depth difference between the SRTM X-band and C-band of the 1°×1° high grid in HMA, and obtain the relationship between the SRTM X-C-band penetration depth difference and the elevation in the glacier area (for specific methods, please refer to references). The data is stored in excel files. Observational data can provide important basic data for studying the glacier mass balance in HMA, and can be used by scientific researchers studying climate, hydrology and glaciers.

2、Keywords

Theme：SRTM C/X-Band radar penetration depth differences,Glacier(Ice Sheet)
Discipline：Cryosphere
Places：The High Mountain Asia
Time：2000

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.034MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：45.5 | - |
| west：67.5 | - | east：102.5 |
| - | south：27.5 | - |

5、Time frame:None--None

6、Reference method

References to data:

JIANG Liming. The Datasets of the SRTM C/X-Band Radar Penetration Depth Differences on 1°×1° grid of High Mountain Asia Glaciers (2000). A Big Earth Data Platform for Three Poles, doi:10.11888/Glacio.tpdc.2712792021

References to articles:

Li, C., Jiang, L., Liu, L., & Wang, H. (2021). Regional and Altitude-Dependent Estimate of the SRTM C/X-Band Radar Penetration Difference on High Mountain Asia Glaciers. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, PP(99), 1-1. doi: 10.1109/JSTARS.2021.3070362.

7、Supporting project information

Key Research Program of Frontier Sciences, CAS
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National Natural Science Foundation of China

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