A Big Earth Data Platform for Three Poles

**A GNSS-based snow depth data set over northern China (GSnow-CHINA v1.0, 12h/24h, 2013-2022)**

1、Description

The GSnow-CHINA Version 1.0 data set is a long-term snow depth data set developed using observations from the two GNSS networks constructed by the China Meteorological Administration (CMA) and the China Earthquake Administration (CEA). We proposed a comprehensive framework using raw data of the complex GNSS station networks to automatically retrieve snow depth and control its quality. The data set includes snow depth of 24-hour, 12-hour, and 2-hour temporal resolutions if possible, for 80 sites from 2013 ~ 2022 over northern China (25° ~ 55° N, 70° ~ 140° E). The spatial footprint of the data set (i.e., ~1000m2) is distinguished from the current point-scale in-situ data or coarse-gridded data, which can be used as an independent data source for validation purposes. The data set is also useful for regional climate research and other meteorological and hydrological applications. The algorithm and the data files will be maintained and updated as more years of data become available in the future.

2、Keywords

Theme：Snow depth,Snow,Remote Sensing Technology,Meteorological data,Hydrology
Discipline：Terrestrial Surface,Remote Sensing Technology,Cryosphere
Places：China
Time：2013-2020

3、Data details

1.Scale：None

2.Projection：

3.Filesize：160.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：55.0 | - |
| west：70.0 | - | east：140.0 |
| - | south：25.0 | - |

5、Time frame:2012-12-31 16:00:00+00:00--2020-12-30 16:00:00+00:00

6、Reference method

References to data:

GUO Zhizhou, ZHANG Jie, HU Heng, LIU Baojian, LIANG Hong, WAN Wei, DAI Liyun, YANG Ting, ZHAO Limin. A GNSS-based snow depth data set over northern China (GSnow-CHINA v1.0, 12h/24h, 2013-2022). A Big Earth Data Platform for Three Poles, doi:10.11888/Cryos.tpdc.2718392021

References to articles:

7、Supporting project information

National Natural Science Foundation of China (NSFC) project “Using BDS/GPS reflection data from ground observation networks over northern China to estimate snow depth”

8、Data resource provider

name: DAI Liyun
unit:
email: dailiyun@lzb.ac.cn

name: WAN Wei
unit:
email: w.wan@pku.edu.cn

name: GUO Zhizhou
unit:
email: zzguo@pku.edu.cn

name: ZHANG Jie
unit:
email: 1601060221@s.upc.edu.cn

name: HU Heng
unit:
email: huheng@cma.gov.cn

name: YANG Ting
unit:
email: yangt@igsnrr.ac.cn

name: LIANG Hong
unit:
email: liangh@cma.gov.cn

name: ZHAO Limin
unit:
email: zhaolm@radi.ac.cn

name: LIU Baojian
unit:
email: liubaojian@pku.edu.cn