A Big Earth Data Platform for Three Poles

**Greenland ice sheet mass change data products (2002-2019)**

1、Description

This data set includes 2002/04-2019/12 Greenland ice sheet mass changes derived from satellite gravimetry measurements. The satellite gravimetry data come from the joint NASA/DLR Gravity Recovery And Climate Experiment mission twin satellites (GRACE, 2002/04 to 2017/06) and its successor, GRACE Follow-On (GRACE-FO, 2018/06 to present). In order to fill the data gap between GRACE and GRACE-FO, we further utilize gravity field solutions derived from high-low GNSS tracking data of ESA's Swarm 3-satellite constellation whose primary scientific objective is geomagnetic surveying. The data set is provided in Matlab data format, the ice sheet mass changes are transformed to equivalent water height in meters, expressed on 0.25°x0.25° grid with monthly temporal resolution. This data set can be used to study the characteristics of Greenland ice sheet mass changes in recent two decades and their relation with the global climate change.

2、Keywords

Theme：Ice sheets,Mass balance,Glacier(Ice Sheet)  
Discipline：Cryosphere  
Places：Greenland  
Time：2002-2019

3、Data details

1.Scale：None

2.Projection：

3.Filesize：2000.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：85.0 | - |
| west：-90.0 | - | east：-10.0 |
| - | south：58.0 | - |

5、Time frame:2002-04-09 00:00:00+00:00--2020-01-08 11:59:59+00:00

6、Reference method

References to data:

C.K. Shum. Greenland ice sheet mass change data products (2002-2019). A Big Earth Data Platform for Three Poles, doi:10.11888/Glacio.tpdc.2704042020

References to articles:

7、Supporting project information

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

8、Data resource provider

name: C.K. Shum  
unit:   
email: ckshum@osu.edu