A Big Earth Data Platform for Three Poles

**Antarctica Ice Sheet Mass Changes from Satellite Gravimetry (2002-2019)**

1、Description

This dataset includes the Antarctica ice sheet mass balance estimated from satellite gravimetry data, April 2002 to December 2019. The satellite measured gravity data mainly come from the joint NASA/DLR mission, Gravity Recovery And Climate Exepriment (GRACE, April 2002 to June 2017), and its successor, GRACE-FO (June 2018 till present). Considering the ~1-year data gap between GRACE and GRACE-FO, we extra include gravity data estimated from GPS tracking data of ESA's Swarm 3-satellite constellation. The GRACE data used in this study are weighted mean of CSR, GFZ, JPL and OSU produced solutions. The post-processing includes: replacing GRACE degree-1, C20 and C30 spherical harmonic coefficients with SLR estimates, destriping filtering, 300-km Gaussian smoothing, GIA correction using ICE6-G\_D (VM5a) model, leakage reduction using forward modeling method and ellipsoidal correction.

2、Keywords

Theme：Others,Glacier(Ice Sheet)
Discipline：Remote Sensing Technology,Cryosphere
Places：Antarctica
Time：2002 to 2019

3、Data details

1.Scale：None

2.Projection：

3.Filesize：2000.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：-60.0 | - |
| west：-180.0 | - | east：180.0 |
| - | south：-90.0 | - |

5、Time frame:2002-03-31 16:00:00+00:00--2019-12-30 16:00:00+00:00

6、Reference method

References to data:

C.K. Shum. Antarctica Ice Sheet Mass Changes from Satellite Gravimetry (2002-2019). A Big Earth Data Platform for Three Poles, 2020

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