A Big Earth Data Platform for Three Poles

**Daily cloud-free snow composite products from MODIS Terra-Aqua and IMS for the Tibetan Plateau (2004-2013)**

1、Description

In this study, an algorithm that combines MODIS Terra and Aqua (500 m) and the Interactive Multisensor Snow and Ice Mapping System (IMS) (4 km) is presented to provide a daily cloud-free snow-cover product (500 m), namely Terra-Aqua-IMS (TAI). The overall accuracy of the new TAI is 92.3% as compared with ground stations in all-sky conditions; this value is significantly higher than the 63.1% of the blended MODIS Terra-Aqua product and the 54.6% and 49% of the original MODIS Terra and Aqua products, respectively. Without the IMS, the daily combination of MODIS Terra-Aqua over the Tibetan Plateau (TP) can only remove limited cloud contamination: 37.3% of the annual mean cloud coverage compared with the 46.6% (MODIS Terra) and 55.1% (MODIS Aqua). The resulting annual mean snow cover over the TP from the daily TAI data is 19.1%, which is similar to the 20.6% obtained from the 8-day MODIS Terra product (MOD10A2) but much larger than the 8.1% from the daily blended MODIS Terra-Aqua product due to the cloud blockage.

2、Keywords

Theme：Surface Water,Galactic System,Snow,Hydrology
Discipline：Terrestrial Surface,Solar-Terrestrial Physics and Astronomy,Cryosphere
Places：Tibetan Plateau
Time：Daily

3、Data details

1.Scale：None

2.Projection：

3.Filesize：1800.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：45.0 | - |
| west：65.0 | - | east：110.0 |
| - | south：25.0 | - |

5、Time frame:2003-12-31 16:00:00+00:00--2013-12-30 16:00:00+00:00

6、Reference method

References to data:

ZHANG Guoqing. Daily cloud-free snow composite products from MODIS Terra-Aqua and IMS for the Tibetan Plateau (2004-2013). A Big Earth Data Platform for Three Poles, doi:10.11888/Geogra.tpdc.2712322021

References to articles:

Yu, J., Zhang\*, G., Yao, T., Xie, H., Zhang, H., Ke, C., and Yao, R., (2016). Developing daily cloud-free snow composite products from MODIS Terra-Aqua and IMS for the Tibetan Plateau, IEEE Transactions on Geoscience and Remote Sensing, 54(4), 2171−2180, doi: 10.1109/TGRS.2015.2496950

7、Supporting project information

8、Data resource provider

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