A Big Earth Data Platform for Three Poles

**The daily albedo product coupling topographic effects over the Tibet Plateau (2002-2020)**

1、Description

This data set is daily surface albedo product over Tibet plateau region from 2002 to 2020 with a spatial resolution of 0.00425°. The MODIS reflectance data product was used to retrieve the Extended Multi-Sensor Combined BRDF Inversion (EMCBI) Model which has coupled with topographic effects with assistance of a BRDF priori-knowledge. The daily BRDF was retrieved in a 5-day period to collect multi-angular information from MODIS observations. And then the daily albedo is estimated, where the black sky albedo was calculated at local noon. MODIS surface reflectance data (MOD09GA and MYD09GA) are downloaded from the official website. The albedo product is quality-controlled with better temporal and spatial continuity in Tibet plateau area. The validation results show that it meets the accuracy requirements of albedo application with higher precisions comparing to the other similar products. And thus, this product is useful for the long-term environmental monitoring and radiation energy budget research study.

2、Keywords

Theme：Albedo,Terrestrial Surface Remote Sensing  
Discipline：Terrestrial Surface  
Places：Tibetan Plateau  
Time：day, 2002-2020, dinural variation

3、Data details

1.Scale：None

2.Projection：WGS84

3.Filesize：200.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：40.0 | - |
| west：73.0 | - | east：105.0 |
| - | south：25.0 | - |

5、Time frame:2001-12-31 16:00:00+00:00--2020-12-30 16:00:00+00:00

6、Reference method

References to data:

YOU Dongqin, YOU Dongqin, WEN Jianguang , TANG Yong, TANG Yong, HAN Yuan , HAN Yuan. The daily albedo product coupling topographic effects over the Tibet Plateau (2002-2020). A Big Earth Data Platform for Three Poles, doi:10.11888/Terre.tpdc.2720472022

References to articles:

Wen, J., You, D., Han, Y., Lin, X., Wu, S., Tang, Y., Xiao, Q., & Liu, Q. (2022). Estimating Surface BRDF/Albedo Over Rugged Terrain Using an Extended Multisensor Combined BRDF Inversion (EMCBI) Mode. IEEE Geosci. Remote Sens. Lett., 19, 1-5.

7、Supporting project information

the Second Tibetan Plateau Scientific Expedition and Research Program (STEP)  
Development of Tibetan BRDF/Albedo retriveal algorithm coupling topographic effects and combining multi-sensory data in snow or snow-free cases repectively

8、Data resource provider

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