A Big Earth Data Platform for Three Poles

**Land Surface Soil Moisture Dataset of SMAP Time-Expanded Daily 0.25°×0.25° over Qinghai-Tibet Plateau Area (SMsmapTE, V1)**

1、Description

This dataset contains land surface soil moisture products with SMAP time-expanded daily 0.25°×0.25°in Qinghai-Tibet Plateau Area. The dataset was produced based on the Random Forest method by utilizing passive microwave brightness temperature along with some auxiliary datasets. The temporal resolution of the product in 1980,1985,1990,1995 and 2000 is monthly, by using SMMR, SSM/I, and SSMIS brightness temperature from 19 GHz V/H and 37 GHz V channels. The temporal resolution of the product between June 20, 2002 and Dec 30, 2018 is daily, by utilizing AMSR-E and AMSR2 brightness temperature from 6.925 GHz V/H, 10.65 GHz V/H, and 36.5 GHz V channels. The auxiliary datasets participating in the Random Forest training include the IGBP land cover type, GTOPO30 DEM, and Lat/Lon information.

2、Keywords

Theme：Soil,Surface soil moisture,Soil moisture/Water content,Terrestrial Surface Remote Sensing
Discipline：Terrestrial Surface
Places：Qinghai-Tibet Plateau
Time：1980, 1985, 1990, 1995, 2000, and from June 20, 2000 to Dec 30, 2018

3、Data details

1.Scale：None

2.Projection：

3.Filesize：605.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：45.0 | - |
| west：70.0 | - | east：110.0 |
| - | south：25.0 | - |

5、Time frame:2002-07-12 16:00:00+00:00--2019-01-21 16:00:00+00:00

6、Reference method

References to data:

CHAI Linna, LIU Shaomin, ZHU Zhongli. Land Surface Soil Moisture Dataset of SMAP Time-Expanded Daily 0.25°×0.25° over Qinghai-Tibet Plateau Area (SMsmapTE, V1). A Big Earth Data Platform for Three Poles, doi:10.11888/Soil.tpdc.2709482020

References to articles:

Liu, J., Chai, L., Lu, Z., Liu, S., Qu, Y., Geng, D., & Wang, J. (2019). Evaluation of SMAP, SMOS-IC, FY3B, JAXA, and LPRM soil moisture products over the Qinghai-Tibet Plateau and its surrounding area. Remote Sensing, 11, 792. (https://doi.org/10.3390/rs11070792)

Qu, Y.Q., Zhu, Z.L., Chai, L.N., Liu, S.M., Montzka, C., Liu, J., Yang, X.F., Lu, Z., Jin, R., Li, X., Guo, Z.X., &Zheng, J. (2019). Rebuilding a Microwave Soil Moisture Product Using Random Forest Adopting AMSR-E/AMSR2 Brightness Temperature and SMAP over the Qinghai–Tibet Plateau, China. Remote Sensing, 11(6), 683.

7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program

8、Data resource provider

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