A Big Earth Data Platform for Three Poles

**Multi-frequency and multi-angular ground-based microwave radiometer and surface parameters experimental data for cropland in 2017**

1、Description

This data set was collected in summer 2017 during the ground-based microwave radiometry experiment, which is part of the Soil Moisture Experiment in the Luan River (SMELR). The experiment site is located in Duolun County, Inner Mongolia (116.47°E, 42.18°N, at 1269 m in altitude). The data set contains three parts, namely brightness temperature data, soil data and vegetation data. The microwave brightness temperature data was observed by a vehicle-mounted dual-polarized multi-frequency radiometer (RPG-6CH-DP), including the horizontal (H) and vertical (V) polarization brightness temperatures at L-, C- and X-bands. The brightness temperature data were acquired from 30° to 65° with an interval of 2.5°, and the time resolution is 0.5 hours. Soil data contains 5 layers of soil moisture and soil temperature (2.5 cm, 10 cm, 20 cm, 30 cm, 50 cm) over three croplands (corn, oats, and buckwheat), with sampling intervals of 10 minutes. The soil data also contains soil surface roughness, rainfall, irrigation flags, and soil texture. Vegetation data contains leaf area index, plant height, vegetation water content, etc.  
The experimental period lasted from July 19 to August 30, 2017, and it provided important data for the land surface microwave radiation modeling and validation, as well as the development of soil moisture retrieval algorithms.

2、Keywords

Theme：Soil,Surface Water,Remote Sensing Technology,Soil moisture,Soil moisture/Water content,Ground-based microwave radiometer  
Discipline：Terrestrial Surface,Remote Sensing Technology  
Places：Duolun County, Shandian River Watershed  
Time：2017year

3、Data details

1.Scale：None

2.Projection：

3.Filesize：3.05MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.18 | - |
| west：116.47 | - | east：116.47 |
| - | south：42.18 | - |

5、Time frame:2017-07-18 16:00:00+00:00--2017-08-30 03:59:59+00:00

6、Reference method

References to data:

GENG Deyuan, HU Lu, SHI Jiancheng, WANG Pingkai, ZHAO Tianjie, FAN Dong, LI Shangnan. Multi-frequency and multi-angular ground-based microwave radiometer and surface parameters experimental data for cropland in 2017. A Big Earth Data Platform for Three Poles, doi:10.11888/Soil.tpdc.2716222021

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7、Supporting project information

Satellite observation and simulation studies of the land surface water and energy exchange processes and its effects on global changes  
Application of Remote Sensing in Water Resources Management in Northeast Thailand

8、Data resource provider

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