A Big Earth Data Platform for Three Poles

**Multi-frequency and multi-angular ground-based microwave radiometer and radar cooperative experimental data for grassland in 2018**

1、Description

This data set was collected in 2018 during the ground-based microwave radiometry and radar cooperative experiment, which is part of the Soil Moisture Experiment in the Luan River (SMELR). The experiment site is located in Zhenglan Banner, Inner Mongolia (115.93° E, 42.04° N, at 1362 m in altitude). The data set contains four parts, namely brightness temperature data, radar backscatter coefficient, 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 was acquired every 30 minutes from 30° to 65° with an interval of 2.5°. The active microwave data is obtained by ground-based synthetic aperture radar (GBSAR), including the L- and C-band backscattering coefficients under four polarization modes (VV, VH, HH, HV), and the incidence varies from 30° to 65° (2.5° interval). The soil data contains the surface roughness, soil moisture and temperature at six depths of layer (1 cm, 3 cm, 5 cm, 10 cm, 20 cm, 50 cm). The vegetation data is mainly the vegetation water content of the grassland.  
The experimental period lasted from August 18 to September 25, 2018, 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：Ground-based SAR,Surface Water,Remote Sensing Technology,Soil moisture,Ground-based microwave radiometer  
Discipline：Terrestrial Surface,Remote Sensing Technology  
Places：Zhenglan Banner, Luan River Watershed, Shandian River Watershed  
Time：2018

3、Data details

1.Scale：None

2.Projection：

3.Filesize：7.7MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.04 | - |
| west：115.93 | - | east：115.93 |
| - | south：42.04 | - |

5、Time frame:2018-08-17 16:00:00+00:00--2018-09-25 03:59:59+00:00

6、Reference method

References to data:

GENG Deyuan, HU Lu, SHI Jiancheng, ZHAO Tianjie. Multi-frequency and multi-angular ground-based microwave radiometer and radar cooperative experimental data for grassland in 2018. A Big Earth Data Platform for Three Poles, doi:10.11888/Soil.tpdc.2716562021

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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

8、Data resource provider

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