A Big Earth Data Platform for Three Poles

**WATER: Dataset of the ground-based microwave radiometers and ground truth observations for soil freeze/thaw cycle in the A'rou foci experimental area**

1、Description

The dataset of the ground-based microwave radiometers and ground truth observations for soil freeze/thaw cycle was obtained in the A'rou foci experimental area (N38º03.639'/E100º26.793'; 2998m) from May 5 to 8, 2008, S-band from Apr. 6 to 8, C-band from Apr. 7 to 8, K-band from Apr. 5 to 8, and Ka-band on Apr. 5, to be specific. The aims of the measurements were the effects of the soil freeze/thaw status on the microwave brightness temperatures.
 The observation site was bare land and the soil moisture was 30% after artificial irrigation. Observation items included the soil temperature at 5cm automatically (the time interval: 10m), the soil temperature at 5cm, 10cm, 20cm and 30cm by the probe thermometer (the time interval: 1h), and the soil moisture at 5cm, 10cm, 20cm and 30cm automatically (the time interval: 10m).
 Seven files were included, four ground-based microwave radiometers (S-band, C-band, K-band and Ka-band) observations, the automatic soil temperature, the manual soil temperature, and the automatic soil moisture, and the last three were archived in Excel format.

2、Keywords

Theme：Soil,Depth of soil freezing,Soil temperature,Soil moisture/Water content,Terrestrial Surface Remote Sensing,Ground verification information
Discipline：Terrestrial Surface
Places：Heihe River Basin, the cold region hydrology experimental area in the upper reaches, A'rou flight zone
Time：

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：61.4MB

4.Data format：EXCEL

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.078 | - |
| west：100.411 | - | east：100.55 |
| - | south：38.015 | - |

5、Time frame:2008-04-18 16:00:00+00:00--2008-04-21 16:00:00+00:00

6、Reference method

References to data:

WU Yueru. WATER: Dataset of the ground-based microwave radiometers and ground truth observations for soil freeze/thaw cycle in the A'rou foci experimental area. A Big Earth Data Platform for Three Poles, doi:10.3972/water973.0019.db2015

References to articles:

7、Supporting project information

The CAS (Chinese Academy of Sciences) Action Plan for West Development Project
National Program on Key Basic Research Project (973 Program

8、Data resource provider

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