A Big Earth Data Platform for Three Poles

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

1、Description

The dataset of ground-based microwave scatterometer and ground truth observations for soil freeze/thaw cycle was obtained in No. 3 quadrate of the A'rou foci experimental area from 22:33 on Mar. 16 to 15:00 on 17, 2008.  
 Observation items included the mean soil temperature from 0-5cm by the probe thermometer, the soil temperature at 5cm and 10cm by the glass geothermometer, the soil temperature, soil volumetric moisture, the loss tangent, soil conductivity, and the real part and the imaginary part of soil complex permittivity by the POGO soil sensor, and soil gravimetric moisture, volumetric moisture, and soil bulk density after drying by the cutting ring (100cm^3). Those provide reliable ground data for retrieval and validation of soil moisture and freeze/thaw status from active remote sensing approaches.   
 Two files were included, the microwave scatterometer and ground truth observations; both were archived in Excel format.

2、Keywords

Theme：Electrical conductivity,Soil,Soil temperature,Remote Sensing Technology,Soil bulk density,Soil moisture/Water content,Ground-based microwave radiometer  
Discipline：Terrestrial Surface,Remote Sensing Technology  
Places：Heihe River Basin, the cold region hydrology experimental area in the upper reaches, A'rou flight zone  
Time：2008,

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：184.8MB

4.Data format：

4、Space scope

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

5、Time frame:2008-03-27 16:00:00+00:00--2008-03-28 16:00:00+00:00

6、Reference method

References to data:

MA Mingguo, QIN Wei. WATER: Dataset of ground-based microwave scatterometer 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/water973.0018.db2013

References to articles:

徐春亮, 陈彦, 贾明权, 刘增灿, 卢海平, 童玲. 典型地物后向散射特性的测量与分析. 地球科学进展, 2009, 24(7): 810-816.

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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