A Big Earth Data Platform for Three Poles

**WATER: Dataset of ground truth measurements synchronizing with Envisat ASAR in the A'rou foci experimental area on Jul. 14, 2008**

1、Description

The dataset of ground truth measurements synchronizing with Envisat ASAR was obtained in No. 1, 2 and 3 quadrates of the A'rou foci experimental area on Jul. 14, 2008.   
 The Envisat ASAR data were in AP mode and VV/VH polarization combinations, and the overpass time was approximately at 11:31 BJT. The quadrates were divided into 4×4 subsites, with each one spanning a 30×30 m2 plot. Those provide reliable ground data for retrieval and validation of soil moisture from active remote sensing approaches.  
 Observation items included:  
 (1) soil moisture by POGO soil sensor in No. 1, 2 and 3 quadrates; 25 corner points of each subsite were chosen for the soil temperature, soil volumetric moisture, the loss tangent, soil conductivity, and the real part and the imaginary part of soil complex permittivity;  
 (2) the soil temperature by the handheld infrared thermometer 3# and 5# from BNU in No. 1 quadrate, 1# and 4# in No. 2 quadrate, and 2# and 6# in No. 3 quadrate; 25 corner points of each subsite were measured twice by two groups, and time, the maximum, the minimum and the mean value, and the land cover types were all recorded.  
 (3) spectrum of the grassland, the bare land and the stellera by the thermal infrared spectrometer, 102F.  
 The dataset includes ASAR images, preprocessed data of the thermal infrared spectrometer, 102F, the surface temperature and soil moisture synchronizing with Envisat ASAR.

2、Keywords

Theme：Soil,Microwave remote sensing,Surface radiation temperature,Earth SurFace Processes,Soil temperature,Surface Freeze-thaw Cycle/state Remote Sensing,Soil moisture/Water content  
Discipline：Terrestrial Surface,Cryosphere  
Places：Heihe River Basin, the cold region hydrology experimental area in the upper reaches, A'rou flight zone  
Time：2008-07-14, 2008

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：277.0MB

4.Data format：EXCEL

4、Space scope

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

5、Time frame:2008-07-26 00:00:00+00:00--2008-07-26 00:00:00+00:00

6、Reference method

References to data:

RAN Youhua, YU Yingjie. WATER: Dataset of ground truth measurements synchronizing with Envisat ASAR in the A'rou foci experimental area on Jul. 14, 2008. A Big Earth Data Platform for Three Poles, doi:10.3972/water973.0008.db2013

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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