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 Oct. 18, 2007 during the pre-observation period**

1、Description

The dataset of ground truth measurements synchronizing with Envisat ASAR was obtained in No. 1 and 2 quadrates of the A'rou foci experimental area on Oct. 18, 2007 during the pre-observation period.   
 The Envisat ASAR data were in AP mode and VV/VH polarization combinations, and the overpass time was approximately at 11:17 BJT. Both the quadrates were divided into 3×3 subsites, with each one spanning a 30×30 m2 plot. 25 sampling points were chosen, including centers and corners of each subsites.  
 Simultaneous with the satellite overpass, numerous ground data were collected, soil volumetric moisture, soil conductivity, the soil temperature, and the real part of soil complex permittivity by the WET soil moisture sensor; the surface radiative temperature by the hand-held infrared thermometer; soil gravimetric moisture, volumetric moisture, and soil bulk density after drying by the cutting ring (100cm^3). Meanwhile, vegetation parameters as height, coverage and water content were also observed. Surface roughness was detailed in the "WATER: Surface roughness dataset in the A'rou foci experimental area".  
 Those provide reliable ground data for retrieval and validation of soil moisture and freeze/thaw status from active remote sensing approaches.

2、Keywords

Theme：Soil,Microwave remote sensing,Surface radiation temperature,Earth SurFace Processes,Surface Freeze-thaw Cycle/state Remote Sensing,Freeze thawing,Soil moisture/Water content,Frozen Ground,Terrestrial Surface Remote Sensing,Ground verification information  
Discipline：Terrestrial Surface,Cryosphere  
Places：Heihe River Basin, the cold region hydrology experimental area in the upper reaches, A'rou flight zone  
Time：2007,

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：60.9MB

4.Data format：EXCEL

4、Space scope

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

5、Time frame:2007-10-28 00:00:00+00:00--2007-10-28 00:00:00+00:00

6、Reference method

References to data:

LI Zhe. WATER: Dataset of ground truth measurements synchronizing with Envisat ASAR in the A'rou foci experimental area on Oct. 18, 2007 during the pre-observation period. A Big Earth Data Platform for Three Poles, doi:10.3972/water973.0003.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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