A Big Earth Data Platform for Three Poles

**WATER: Dataset of ground truth measurement synchronizing with Envisat ASAR and MODIS in the arid region hydrological experimental area on May 24, 2008**

1、Description

The dataset of ground truth measurement synchronizing with Envisat ASAR and MODIS was obtained in the arid region hydrological experimental area on May 24, 2008.
 The Envisat ASAR data were in AP mode and VV/VH polarization combinations, and the overpass time was approximately at 11:34 BJT.
 Observation items included:
 (1) The radiative temperature of Reaumuria soongorica and the bare soil in Huazhaizi desert No. 2 plot (HZZHMYD2)was collected using ThermaCAM SC2000 (1.2m above the ground, FOV = 24°×18°), along the diagonal (NW-SE). The data included raw data (read by ThermaCAM Researcher 2001), recorded data and the blackbody calibrated data (archived as Excel files).
 (2) The radiative temperature by the automatic thermometer (FOV: 10°; emissivity: 0.95), were measured at nadir with time intervals of one second. Raw data, blackbody calibrated data and processed data were all archived as Excel files.
 (3) The radiative temperature in Huazhaizi desert No. 2 plot by the handheld infrared thermometer (which belongs to BNU) along the diagonal (NW-SE). Raw data (.doc), blackbody calibrated data and processed data (in Excel format) were all archived.
 (4) Soil moisture (0-40cm) by the cutting ring and the soil temperature by the thermocouple thermometer in Yingke oasis and Huazhaizi foci experimental area. Besides, (a) roughness of No. 1 and 2 Huazhizi desert plots was also measured by self-made instruments . Sample points were selected every 30m along the diagonal of each plot. (b) soil profile moisture (0-100cm) and the temperature in the maize field of Yingke oasis. (c) soil profile moisture (0-100cm) and the temperature in one orchard of Yingke Oasis. Data were all archived as Excel files.
 (5) the photosynthetic rate of alfalfa and barley at Linze grass station by LI-6400. Raw data were archived in the user-defined format (by notepat.exe) and processed data were as Excel files.
 (6) ground object reflectance spectra of new-born rape and the bare land in Biandukou foci experimental area by ASD FieldSpec (350～2500 nm) from Institute of Remote Sensing Applications (CAS). Raw data were binary files direct from ASD (by ViewSpecPro), and pre-processed data on reflectance were in Excel format.
 (7) LAI by the measuring tape and the ruler in the alfalfa field of Linze grass station. The maximum length and width of alfalfa leaves and barley were measured. Data were archived as Excel files.
 (8) surface roughness in Huazhaizi desert No. 2 plot with the self-made roughness board (Cold and Arid Regions Environmental and Engineering Research Institute, CAS), the digital camera and the compass. Sample points were selected at equal intervals along the diagonals and marked in the photos.

2、Keywords

Theme：Soil,Photosynthesis,Surface radiation temperature,Canopy spectrum,Leaf area index,Terrain spectrometer,Vegetation,Earth SurFace Processes,Soil temperature,Soil moisture/Water content,Terrestrial Surface Remote Sensing,Ground verification information
Discipline：Terrestrial Surface
Places：Heihe River Basin, Arid Region Hydrology in the Middle Reaches, closed observation area of Biandoukou,
Time：2008,

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：1423.1MB

4.Data format：

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：39.268 | - |
| west：100.037 | - | east：101.036 |
| - | south：38.192 | - |

5、Time frame:2008-06-05 08:00:00+00:00--2008-06-05 08:00:00+00:00

6、Reference method

References to data:

YAN Guangkuo, YANG Tianfu, ZHOU Chunyan, XU Zhen, YAN Binyan, WANG Haoxing, ZHANG Yang, LI Li, WANG Jindi, GUANG Jie, YAO Yanjuan, GE Yingchun, SHU Lele, TAO Xin, CHENG Zhanhui, XIN Xiaozhou, WANG Jianhua. WATER: Dataset of ground truth measurement synchronizing with Envisat ASAR and MODIS in the arid region hydrological experimental area on May 24, 2008. A Big Earth Data Platform for Three Poles, doi:10.3972/water973.0121.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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