A Big Earth Data Platform for Three Poles

**WATER: Dataset of ground truth measurements synchronizing with the airborne WiDAS mission in the Linze station foci experimental area on Jun. 29, 2008**

1、Description

The dataset of ground truth measurements synchronizing with the airborne WiDAS mission was obtained in the Linze station foci experimental area on Jun. 29, 2008. WiDAS, composed of four CCD cameras, one mid-infrared thermal imager (AGEMA 550), and one infrared thermal imager (S60), can acquire CCD, MIR and TIR band data. The simultaneous ground data included:
 (1) soil moisture (0-5cm) nine times by the cutting ring (50cm^3) along LY06 and LY07 strips, and once by the cutting ring method and once by ML2X Soil Moisture Tachometer in the six points of Wulidun farmland quadrates. The preprocessed soil volumetric moisture data were archived as Excel files.
 (2) surface radiative temperature measured three times by three handheld infrared thermometer (5# and 6# from Cold and Arid Regions Environmental and Engineering Research Institute, and one from Institute of Geographic Sciences and Natural Resources, which were all calibrated) in LY06 and LY07 strips (98 sample points and repeated three times) and the Wulidun farmland quadrates (various points and repeated three times). Data were archived as Excel files.
 (3) maize canopy component temperature measured by the 5# handheld infrared thermometer (from Cold and Arid Regions Environmental and Engineering Research Institute) in Wulidun farmland quadrates. Six directions were measured, canopy backlighting and frontlighting, half height backlighting and frontlighting, the light and the shaded bareland, with each direction 20 measurements.
 (4) spectrum of maize, soil and soil with known moisture measured by ASD Spectroradiometer (350～2 500 nm) from BNU, and the reference board (40% before Jun. 15 and 20% hereafter) in Wulidun farmland quadrates. Raw spectral data were binary files , which were recorded daily in detail, and pre-processed data on reflectance (by ViewSpecPro) were archived as Excel.files
 (5) mltiangle maize spectrum measured by ASD Spectroradiometer (350～2 500 nm) from BNU, the reference board (40% before Jun. 15 and 20% hereafter), two observation platforms of BNU make and one of Institute of Remote Sensing Applications make in Wulidun farmland. Raw spectral data were archived as binary files, which were recorded daily in detail, and pre-processed data on reflectance and transmittivity were archived as text files (.txt).
 (6) LAI of maize measured by the fisheye camera (CANON EOS40D with a lens of EF15/28), shooting straight downwards, with exceptions of higher plants, which were shot upwards. Data included original photos (.JPG) and those processed by can\_eye5.0 (in excel).
 (7) LAI of maize measured by LAI2000 in Wulidun farmland quadrates. Data educed from LAI2000 periodically were archived as text files (.txt) and marked with one ID. Raw data (table of word and txt) and processed data (Excel) were included. Besides, observation time, the observation method and the repetition were all archived.
 See the metadata record “WATER: Dataset of setting of the sampling plots and stripes in the Linze station foci experimental area” for more information of the quadrate locations.

2、Keywords

Theme：Soil,Surface radiation temperature,Leaf area index,Terrain spectrometer,Vegetation,Earth SurFace Processes,Soil moisture/Water content,Spectral measurement,Terrestrial Surface Remote Sensing
Discipline：Terrestrial Surface
Places：Heihe River Basin, Arid Region Hydrology in the Middle Reaches, Closed observation area of Linze station
Time：2008,

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：74110.1MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：39.379 | - |
| west：100.11 | - | east：100.201 |
| - | south：39.311 | - |

5、Time frame:2008-07-23 00:00:00+00:00--2008-07-23 00:00:00+00:00

6、Reference method

References to data:

YU Yingjie. WATER: Dataset of ground truth measurements synchronizing with the airborne WiDAS mission in the Linze station foci experimental area on Jun. 29, 2008. A Big Earth Data Platform for Three Poles, doi:10.3972/water973.0105.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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