A Big Earth Data Platform for Three Poles

**WATER: Dataset of ground truth measurement synchronizing with PROBA CHRIS in the Yingke oasis and Huazhaizi desert steppe foci experimental areas on Jul. 1, 2008**

1、Description

The dataset of ground truth measurement synchronizing with PROBA CHRIS was obtained in the Yingke oasis and Huazhaizi desert steppe foci experimental areas on Jul. 1, 2008. Observation items included:
 (1) FPAR (Fraction of Photosynthetically Active Radiation) of maize and wheat by SUNSACN and the digital camera in Yingke oasis maize field. FPAR= (canopyPAR－surface transmissionPAR－canopy reflection PAR+surface reflectionPAR) /canopy PAR; APAR=FPAR\* canopy PAR. Data were archived in the table format of Word.
 (2) BRDF of maize by ASD (350～2 500 nm) from Institute of Remote Sensing Applications (CAS) and the self-made multi-angluar observation platform of BNU make in Yingke oasis maize field. The maximum height of the platform was 5m above the ground with the azimuth 0~360° and the zenith angle -60°~60°. An automatic thermometer was attached to the platform for the multiangle radiative temperature. Raw data were binary files direct from ASD (by ViewSpecPro), and pre-processed data on reflectance were in Excel.
 (3) The radiative temperature of the maize canopy by the automatic thermometer (emissivity: 0.95),at a hight of 50cm from the crown in Yingke oasis maize field. Raw data, blackbody calibrated data and processed data were all archived in Excel format.
 (4) Atmospheric parameters at the resort by CE318 (produced by CIMEL in France). The total optical depth, aerosol optical depth, Rayleigh scattering coefficient, column water vapor in 936 nm, particle size spectrum and phase function were then retrieved from these observations. The optical depth in 1020nm, 936nm, 870nm, 670nm and 440nm were all acquired by CE318. Those data include the raw data in k7 format and can be opened by ASTPWin. ReadMe.txt is attached for details. Processed data (after retrieval of the raw data) in Excel format are on optical depth, rayleigh scattering, aerosol optical depth, the horizontal visibility, the near surface air temperature, the solar azimuth, zenith, solar distance correlation factors, and air column mass number.
 (5) The multiangle radiative temperature by the automatic thermometer (emissivity: 1.0) attached on the observation platform, at an interval of 0.05s. The data were archived in .txt files (.dat format). The first seven lines were the header file, including acquisition date, time, and intervals; besides, Time (starting time), TObj (target temperature), Tint (the interior temperature of the probe), TBox (the temperature of the box) and Tact (the actual temperature calculated from the given emissivity) were also listed.

2、Keywords

Theme：Photosynthetically active radiation,Radiation,Temperature,Surface air temperature,Terrain spectrometer,Vegetation,Aerosol,Scattering,Aerosol optical depth/Thickness,Spectral measurement,Terrestrial Surface Remote Sensing
Discipline：Atmosphere,Terrestrial Surface
Places：Heihe River Basin, Arid Region Hydrology in the Middle Reaches,
Time：2008,

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：416.5MB

4.Data format：

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.88 | - |
| west：100.289 | - | east：100.46 |
| - | south：38.734 | - |

5、Time frame:2008-07-15 00:00:00+00:00--2008-07-15 00:00:00+00:00

6、Reference method

References to data:

ZHOU Mengwei, XIA Chuanfu, XIAO Yueting. WATER: Dataset of ground truth measurement synchronizing with PROBA CHRIS in the Yingke oasis and Huazhaizi desert steppe foci experimental areas on Jul. 1, 2008. A Big Earth Data Platform for Three Poles, doi:10.3972/water973.0131.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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