A Big Earth Data Platform for Three Poles

**WATER: Dataset of ground truth measurements synchronizing with Envisat ASAR in the Linze station foci experimental area from Sep. 12 to Sep. 15, 2007 during the pre-observation period**

1、Description

The dataset of ground truth measurements synchronizing with Envisat ASAR was obtained in the Linze station foci experimental area from Sep. 12 to Sep. 15, 2007 during the pre-observation period. One scene of Envisat ASAR image was captured on Sep. 19. The data were in AP mode and VV/VH polarization combinations, and the overpass time was approximately at 11:29 BJT.  
 Observation items included:  
 (1) GPS by GARMIN GPS 76  
 (2) LAI by LAI-2000  
 (3) photosynthesis measured by LI6400 from Linze station carried out according to WATER specifications. Raw data were archived in the user-defined format , which can be opened by notepat and processed by Excel.  
 (4) object spectrum of typical ground objects measured by ASD FieldSpec Spectroradiometer (350～2 500 nm) from Gansu Meteorological Administration. The reference whiteboard was attached therein. Raw spectral data were archived as binary files, which were recorded daily in detail, and pre-processed data on reflectance were archived as text files (.txt).  
 (5) infrared temperature measured by the handheld infrared thermometer from Cold and Arid Regions Environmental and Engineering Research Institute, which was calibrated. The infrared temperature of the crown, the vertical canopy, 45 degrees frontlight and backlight were measured respectively. The data were archived as Excel files.  
 (6) soil profile (0-10cm, 10-20cm, 20-40cm and 40-60cm), and soil moisture measured by the cutting ring method. Profile photos were taken meanwhile.  
 (7) quadrate (1m×1m) investigations, including the quadrate number, species, quantities, coverage, the total quadrate coverage, the mean height, biomass number, the total green weight and the total dry weight.  
 (8) repeated measurements on chlorophyll content of different species measured by SPAD 502.  
 (9) photos taken by Nikon D80 with a lens of Sigma 8mm F3.5 EX DG CIRCULAR FISHEYE, shooting straight downwards at the height of 1.5m  
 (10) atmospheric parameters at Daman Water Management office measured 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 and can be opened by ASTPWin. ReadMetext files (.txt) is attached for detail. Processed data (after retrieval of the raw data) in Excel 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.

2、Keywords

Theme：Soil,Photosynthesis,Leaf area index,Terrain spectrometer,Vegetation,Soil horizons/profile,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：2007,

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：176.1MB

4.Data format：EXCEL

4、Space scope

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

5、Time frame:2007-09-17 16:00:00+00:00--2007-09-20 16:00:00+00:00

6、Reference method

References to data:

BAI Yunjie, LI Hua, FANG Li, PAN Xiaoduo, WU Yueru, YAN Yeqing, DING Songchuang, LI Zhe, CHE Tao, GAO Song, Liu Qiang, LIANG Ji, HAN Xujun, Wen Jianguang, ZHANG Lingmei, YAN Qiaodi, MA Hongwei, WANG Xufeng, RAN Youhua, LI Xin, YUAN Xiaolong, LI Hongyi, QIN Chun, HAO Xiaohua. WATER: Dataset of ground truth measurements synchronizing with Envisat ASAR in the Linze station foci experimental area from Sep. 12 to Sep. 15, 2007 during the pre-observation period. A Big Earth Data Platform for Three Poles, doi:10.3972/water973.0191.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

name: HAO Xiaohua  
unit: Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences  
email: haoxh@lzb.ac.cn  
  
name: WANG Xufeng  
unit: Cold and Arid Regions Environmental and Engineering Research Institute, CAS  
email: wangxufeng@lzb.ac.cn  
  
name: Wen Jianguang  
unit:   
email: wenjg@irsa.ac.cn  
  
name: LI Hua  
unit:   
email:   
  
name: LI Xin  
unit:   
email: xinli@itpcas.ac.cn  
  
name: Liu Qiang  
unit:   
email:   
  
name: GAO Song  
unit:   
email:   
  
name: RAN Youhua  
unit:   
email: ranyh@lzb.ac.cn  
  
name: QIN Chun  
unit:   
email:   
  
name: WU Yueru  
unit:   
email:   
  
name: LIANG Ji  
unit:   
email: leung@lzb.ac.cn  
  
name: LI Hongyi  
unit:   
email: lihongyi@lzb.ac.cn  
  
name: LI Zhe  
unit:   
email:   
  
name: DING Songchuang  
unit:   
email:   
  
name: FANG Li  
unit:   
email: li\_fang113@163.com  
  
name: MA Hongwei  
unit:   
email:   
  
name: YUAN Xiaolong  
unit:   
email:   
  
name: BAI Yunjie  
unit:   
email: baiyj27@163.com  
  
name: YAN Qiaodi  
unit:   
email:   
  
name: ZHANG Lingmei  
unit:   
email:   
  
name: YAN Yeqing  
unit:   
email:   
  
name: CHE Tao  
unit:   
email: chetao@lzb.ac.cn  
  
name: HAN Xujun  
unit:   
email:   
  
name: PAN Xiaoduo  
unit: Institute of Tibetan Plateau Research, CAS  
email: panxd@itpcas.ac.cn