A Big Earth Data Platform for Three Poles

**WATER: Dataset of ground truth measurements synchronizing with EO-1 Hyperion in the Yingke oasis foci experimental area during the pre-observation period ( Sep. 5 - Sep. 10, 2007 )**

1、Description

The dataset of ground truth measurements synchronizing with EO-1 Hyperion was obtained in the Yingke oasis foci experimental area from Sep. 5 to Sep. 10, 2007 during the pre-observation period. It was carried out by the 3rd and 2nd sub-projects of CAS’s West Action Plan along Zhangye city-Yingke oasis-Huazhaizi, and on the very day of 10, one scene of Hyperion was captured.  
  
sampling plot time north latitude east longitude elevation notes  
1 9:58 38°53′53.2″ 100°26′09.7″ 1500 cauliflower land east to the road   
2 10:51 38°52′39.8″ 100°25′33.1″ 1510 cabbage land east to the road   
3 11:35 38°52′39.0″ 100°25′34.6″ 1510 east to No. 2 sampling plot, maize and intercropping wheat reaped  
4 12:24 38°51′53.0″ 100°25′08.0″ 1510 maize seed  
5 13:08 38°51′54.2″ 100°25′09.5″ 1520 north to No. 4 sampling plot, maize and intercropping wheat reaped  
6 14:40 38°51′23.5″ 100°24′45.0″ 1510 west to the road, maize seed, serious blights (red spider)  
7 15:40 38°49′26.6″ 100°23′23.7″ 1540 intercrop land of sea buckthorn and beet  
8 16:18 38°49′06.9″ 100°23′30.5″ 1540 tomato land, rich of amaranth weeds  
9 16:18 38°49′06.4″ 100°23′30.8″ 1540 beet land  
10 16:18 38°49′06.9″ 100°23′30.5″ 1540 tomato land with less weeds  
11 10:30 38°48′28.3″ 100°24′11.4″ 1540 sea buckthorn seedling land west to the road  
12 11:24 38°48′09.3″ 100°24′10.1″ 1550 sun flower land east to the road, intercropping wheat reaped  
13 12:38 38°46′16.3″ 100°23′14.2″ 1600 dry rice land  
14 12:45 38°46′16.2″ 100°23′14.0″ 1600 rape land  
15 12:54 38°46′15.6″ 100°23′13.8″ 1600 buckwheat land  
16 14:52 38°45′55.5″ 100°23′00.1″ 1610 maize (without intercrop)  
17 15:28 38°45′57.5″ 100°22′28.3″ 1630 maize (without intercrop)  
18 16:20 38°43′17.3″ 100°22′53.4″ 1730 gobi (Bassia dasyphylla and margarite dominate)  
19 17:40 38°42′31.8″ 100°22′56.8″ 1780 gobi (Bassia dasyphylla and Sympegma regelii dominate)  
20 10:27 38°36′25.1″ 100°20′33.2″ 2260 wheatgrass dominates  
21 11:10 38°36′24.4″ 100°20′38.1″ 2260 abandoned composite land  
22 11:30 2260 near site 22, wheatgrass and composite cenosis  
23 bare land   
24 13:09 38°38′46.3″ 100°23′08.5″ 2030 alfalfa land  
25 14:39 38°44′30.8″ 100°22′41.0″ 1660 poplar  
26 9:47 38°58′11.4″ 100°26′18.3″ 1460 rice land  
 Observation items included:  
 (1) quadrat surveys  
 (2) LAI by LAI-2000  
 (3) ground object reflectance spectra by ASD FieldSpec Pro (350-2500nm)from Gansu Meteorological Administration  
 (4) the land surface temperature and the canopy radiative temperature by the hand-held thermal infrared sensor  
 (5) the photosynthesis rate by LI-6400  
 (6) the radiative temperature by ThermaCAM SC2000  
 (7) Atmospheric parameters by CE318 to retrieve the total optical depth, aerosol optical depth, Rayleigh scattering coefficient, column water vapor in 936 nm, and various parameters at 550nm to obtain horizontal visibility with the help of MODTRAN or 6S codes  
 (8) chlorophyll consistency by portable SPAD  
 Those provide reliable ground data for developing and validating retrieval meathods of biophysical parameters from EO-1 Hyperion images.

2、Keywords

Theme：Canopy spectrum,Terrain spectrometer,Vegetation,Chlorophyll,Aerosol,Aerosol optical depth/Thickness,Aerosol backscatter,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：1498.7MB

4.Data format：EXCEL

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.88 | - |
| west：100.37 | - | east：100.46 |
| - | south：38.812 | - |

5、Time frame:2007-09-20 00:00:00+00:00--2007-09-24 00:00:00+00:00

6、Reference method

References to data:

HAN Hui, YAN Qiaodi, XIN Xiaozhou, HAO Xiaohua. WATER: Dataset of ground truth measurements synchronizing with EO-1 Hyperion in the Yingke oasis foci experimental area during the pre-observation period ( Sep. 5 - Sep. 10, 2007 ). A Big Earth Data Platform for Three Poles, doi:10.3972/water973.0262.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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