A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of photosynthesis observed by LI-6400 in the middle reaches of the Heihe River Basin**

1、Description

The dataset of photosynthesis was observed by LI-6400XT Portable Photosynthesis System in the artificial oasis eco-hydrology experimental area of the Heihe River Basin. Observation items included two main crops in the middle reaches of Heihe river: wheat and maize, which located in the town of Pingchuan in Linze and the Super Station of Wuxing, respectively. Observation periods lasted from mid-May to September. This dataset included the raw observation data and the pretreatment data of wheat and maize observed by LI-6400 during the observation periods.
Objectives of observation: The photosynthetic datasets can be used in the study of plant physiological ecology characteristic and the simulation and validation for the eco-hydrological models.
Instrument and theory of the observation: (1) Measuring instrument: LI-6400XT Portable Photosynthesis System; (2) Measuring theory: Using the infrared gas analyzer to measure the change of CO2 concentration, and then measuring the differences of CO2 concentration between the sample chamber and the referenced chamber so as to acquire the net productivity of the leaf.
Time and site of observation: (1) Observation site of the wheat: in the town of Pingchuan in Linze; Observation time: 2012-05-17，2012-06-08 to 2012-6-13; (2) Observation site of the maize: in the Super Station of Wuxing; Observation time: from 2012-05-19 to 2012-08-15. The time used in this dataset is in UTC+8 Time.
Data processing: The raw data of LI-6400 were archived in text format and can be opened by text editor or excel, the preprocessed data were in Excel format. Every time period of observation was archived in a single document, named as “date + type + time”, every leaf was recorded 3 times, and then added a remark.

2、Keywords

Theme：Photosynthetically active radiation,Vegetation,Evapotranspiration,Carbon cycle
Discipline：Terrestrial Surface
Places：Heihe River Basin, the artificial oasis experimental area in the middle reaches, Daman Superstation,
Time：2012, 2012-05-17 to 2012-09-15

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：0.0MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.85464 | - |
| west：100.3722 | - | east：100.3722 |
| - | south：38.85464 | - |

5、Time frame:2012-05-30 18:46:00+00:00--2012-09-28 18:46:00+00:00

6、Reference method

References to data:

HiWATER: Dataset of photosynthesis observed by LI-6400 in the middle reaches of the Heihe River Basin. A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.046.2013.db2017

References to articles:

Li, X., Liu, S.M., Xiao, Q., Ma, M.G., Jin, R., Che, T., Wang, W.Z., Hu, X.L., Xu, Z.W., Wen, J.G., Wang, L.X. (2017). A multiscale dataset for understanding complex eco-hydrological processes in a heterogeneous oasis system. Scientific Data, 4, 170083. doi:10.1038/sdata.2017.83.

7、Supporting project information

Heihe Watershed Allied Telemetry Experimental Research (HiWATER)

8、Data resource provider