A Big Earth Data Platform for Three Poles

**Meteorological, albedo and evapotranspiration data set of hulugou shrub experimental area in the upper reaches of Heihe River (2012-2014)**

1、Description

The data set is the meteorological and observational data of hulugou shrub experimental area in the upper reaches of Heihe River, including meteorological data, albedo data and evapotranspiration data under shrubs.
1. Meteorological data: Qilian station longitude: 99 ° 52 ′ E; latitude: 38 ° 15 ′ n; altitude: 3232.3m, scale meteorological data from January 1, 2012 to December 31, 2013. Observation items include: temperature, humidity, vapor pressure, net radiation, four component radiation, etc. The data are daily scale data, and the calculation period is 0:00-24:00
2. Albedo: daily surface albedo data from January 1, 2012 to July 3, 2014, including snow and non snow periods. The measuring instrument is the radiation instrument on the 10m gradient tower in hulugou watershed. Among them, the data from August 4 to October 2, 2012 was missing due to instrument circuit problems, and the rest data quality was good
3. Evapotranspiration: surface evapotranspiration data of Four Typical Shrub Communities in hulugou watershed. The observation period is from July 18 to August 5, 2014, which is the daily scale data. The data include precipitation data, evaporation and infiltration data observed by lysimeter. The data set can be used to analyze the evapotranspiration data of alpine shrubs and forests.
The evapotranspiration of grassland under canopy was measured by a small lysimeter with a diameter of 25 cm and a depth of 30 cm. Two lysimeters were set up in each shrub plot, and one lysimeter was set for each shrub in transplanting experiment. The undisturbed undisturbed soil column with the same height as the barrel is placed in the inner bucket, and the outer bucket is buried in the soil. During the embedding, the outer bucket shall be 0.5-1.0 cm higher than the ground, and the outer edge of the inner barrel shall be designed with a rainproof board about 2.0 cm wide to prevent surface runoff from entering the lysimeter. Lysimeter was set up in the nearby meteorological stations to measure grassland evapotranspiration, and a small lysimeter with an inner diameter of 25 cm and a depth of 30 cm was also set up in the sample plot of Picea crassifolia forest to measure the evaporation under the forest. All lysimeters are weighed at 20:00 every day (the electronic balance has a sensing capacity of 1.0 g, which is equivalent to 0.013 mm evaporation). Wind proof treatment should be taken to ensure the accuracy of measurement.
Data processing method: evapotranspiration is mainly calculated by mass conservation in lysimeter method. According to the design principle of lysimeter lysimeter, evapotranspiration is mainly determined by the quality difference in two consecutive days. Since it is weighed every day, it is calculated by water balance.

2、Keywords

Theme：Albedo,Radiation,Temperature,Vegetation,Snow,Evapotranspiration,Humidity/Dryness
Discipline：Atmosphere,Terrestrial Surface,Cryosphere
Places：Heihe River Basin, Hulugou Basin
Time：2012-2014

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：0.03MB

4.Data format：EXCEL

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.28 | - |
| west：99.83 | - | east：99.9 |
| - | south：38.2 | - |

5、Time frame:2012-01-12 05:51:00+00:00--2014-08-11 05:51:00+00:00

6、Reference method

References to data:

SONG Yaoxuan, LIU Zhangwen. Meteorological, albedo and evapotranspiration data set of hulugou shrub experimental area in the upper reaches of Heihe River (2012-2014). A Big Earth Data Platform for Three Poles, doi:10.3972/heihe.418.2014.db2015

References to articles:

7、Supporting project information

8、Data resource provider

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