A Big Earth Data Platform for Three Poles

**Observation of water and heat flux in alpine meadow ecosystem —automatic weather station of Jingyangling station (2015-2017)**

1、Description

The data set contains the meteorological element observation data of jingyangling station in the upper reaches of heihe hydrometeorological observation network on January 1, 2015 and December 31, 2017.The site is located in pass, jingyangling mountain, qilian county, qinghai province.The longitude and latitude of the observation point are 101.1160E, 37.8384N and 3750m above sea level.The air temperature and relative humidity sensor is set up at 5m, facing due north.The barometer is installed in the anti-skid box on the ground;The tipping bucket rain gauge is installed at 10m;The wind speed and direction sensor is mounted at 10m, facing due north;The four-component radiometer is installed at 6m, facing due south;Two infrared thermometers are installed at 6m, facing south, with the probe facing vertically downward;The soil temperature probe is buried at the surface of 0cm and underground of 4cm, 10cm, 20cm, 40cm, 80cm, 120cm and 160cm, 2m south of the meteorological tower.The soil moisture probe is buried underground at 4cm, 10cm, 20cm, 40cm, 80cm, 120cm and 160cm, 2m south of the meteorological tower.The soil heat flow plates (3 pieces) are successively buried 6cm underground, 2m south of the meteorological tower.  
Observation projects are: air temperature and humidity (Ta\_5m, RH\_5m) (unit: c, percentage), pressure (Press) (unit: hundred mpa), precipitation (Rain) (unit: mm), wind speed (WS\_10m) (unit: m/s), wind (WD\_10m) (unit: degrees), the radiation of four component (DR, UR, DLR\_Cor, ULR\_Cor, Rn) (unit: watts per square meter), the surface radiation temperature (IRT\_1, IRT\_2) (unit:Soil temperature (Ts\_0cm, Ts\_4cm, Ts\_10cm, Ts\_20cm, Ts\_40cm, Ts\_80cm, Ts\_120cm, Ts\_160cm) (unit: percent).  
Processing and quality control of observation data :(1) 144 data per day (every 10min) should be ensured.(2) eliminate the moments with duplicate records;(3) data that obviously exceeds the physical significance or the range of the instrument is deleted;(4) the part marked with red letters in the data is questionable data;(5) the format of date and time is uniform, and the date and time are in the same column.For example, the time is: 2015-9-10 10:30;(6) naming rules: AWS+ site name.  
For information of hydrometeorological network or site, please refer to Li et al. (2013), and for data processing, please refer to Liu et al. (2011).

2、Keywords

Theme：Soil,Precipitation,Winds,Precipitation amount,Soil temperature,Humidity/Dryness,Soil moisture/Water content,Pressure,wind speed,Soil heat flux  
Discipline：Atmosphere,Terrestrial Surface  
Places：Heihe River Basin, the cold region hydrology experimental area in the upper reaches, Jingyangling station  
Time：2015-2017

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：33.2MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：37.8384 | - |
| west：101.116 | - | east：101.116 |
| - | south：37.8384 | - |

5、Time frame:2015-01-08 16:00:00+00:00--2018-01-07 16:00:00+00:00

6、Reference method

References to data:

TAN Junlei, LI Xin, LIU Shaomin, XU Ziwei, CHE Tao, ZHANG Yang. Observation of water and heat flux in alpine meadow ecosystem —automatic weather station of Jingyangling station (2015-2017). A Big Earth Data Platform for Three Poles, doi:10.11888/Geogra.tpdc.2704002019

References to articles:

Che, T., Li, X., Liu, S., Li, H., Xu, Z., Tan, J., Zhang, Y., Ren, Z., Xiao, L., Deng, J., Jin, R., Ma, M., Wang, J., & Yang, X. (2019). Integrated hydrometeorological, snow and frozen-ground observations in the alpine region of the Heihe River Basin, China. Earth System Science Data, 11, 1483-1499  
  
Liu, S.M., Li, X., Xu, Z.W., Che, T., Xiao, Q., Ma, M.G., Liu, Q.H., Jin, R., Guo, J.W., Wang, L.X., Wang, W.Z., Qi, Y., Li, H.Y., Xu, T.R., Ran, Y.H., Hu, X.L., Shi, S.J., Zhu, Z.L., Tan, J.L., Zhang, Y., & Ren, Z.G. (2018). The Heihe Integrated Observatory Network: A Basin-Scale Land Surface Processes Observatory in China. Vadose Zone Journal, 17(1), 180072. doi:10.2136/vzj2018.04.0072.  
  
Liu, S.M., Xu, Z.W., Wang, W.Z., Bai, J., Jia, Z., Zhu, M., & Wang, J.M. (2011). A comparison of eddy-covariance and large aperture scintillometer measurements with respect to the energy balance closure problem. Hydrology and Earth System Sciences, 15(4), 1291-1306.

7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program

8、Data resource provider

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