A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of hydrometeorological observation network (automatic weather station of Jingyangling station, 2017)**

1、Description

The data set contains meteorological element observation data from January 1, 2017 to December 31, 2017 from jingyangling station, upstream of heihe hydrological meteorological observation network.The station is located in jingyangling pass, 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 sensors are located at 5m, facing due north.The barometer is installed in the anti-skid box on the ground;The tilting bucket rain gauge is installed at 10m;The wind speed and direction sensor is set at 10m, facing due north;The four-component radiometer is installed at 6m, facing due south;Two infrared thermometers are installed at 6m, facing due south, and the probe facing vertically downward;The soil temperature probe is buried at 0cm on the surface and 4cm underground, 10cm, 20cm, 40cm, 80cm, 120cm, 160cm, 2m to the south of the meteorological tower.The soil water probe is buried at 4cm, 10cm, 20cm, 40cm, 80cm, 120cm and 160cm underground, 2m to the south of the meteorological tower.The soil heat flow plates (3 pieces) are buried in the ground 6cm underground, 2m to the south of the meteorological tower.
Observation items 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 heat flux (Gs\_1, Gs\_2, Gs\_3) (in watts/m2), soil temperature (Ts\_0cm, Ts\_4cm, Ts\_10cm, Ts\_20cm, Ts\_80cm, Ts\_120cm, Ts\_160cm) (in Celsius), soil moisture (Ms\_4cm, Ms\_10cm, Ms\_20cm, Ms\_40cm, Ms\_80cm, Ms\_120cm, Ms\_160cm) (unit: percentage).
Processing and quality control of observed data :(1) ensure 144 pieces of data every day (every 10min), and mark by -6999 in case of data missing;Some invalid values of 4cm soil moisture appeared in November and December.5.13-5.27 and 6.7-7.5, data is missing due to problems with the collector;7.17-8.17 problems with the wind speed sensor and missing data;Problems with the infrared temperature sensor and missing data;(2) excluding the time 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 letter in the data is the data in question;(5) date and time have the same format, and date and time are in the same column.For example, the time is: 2017-9-1010:30;(6) the naming rule is: AWS+ site name.
For information of hydrometeorological network or station, please refer to Li et al. (2013), and for observation data processing, please refer to Liu et al. (2011).

2、Keywords

Theme：Precipitation,Meteorological element
Discipline：Atmosphere
Places：Heihe River Basin, the cold region hydrology experimental area in the upper reaches, Jingyangling station
Time：2017, 2017-01-01 to 2017-12-31

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：10.6MB

4.Data format：文本

4、Space scope

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

5、Time frame:2017-01-17 08:00:00+00:00--2018-01-16 08:00:00+00:00

6、Reference method

References to data:

TAN Junlei, LI Xin, LIU Shaomin, XU Ziwei, CHE Tao, ZHANG Yang. HiWATER: Dataset of hydrometeorological observation network (automatic weather station of Jingyangling station, 2017). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.22.2018.db2018

References to articles:

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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.

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

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