A Big Earth Data Platform for Three Poles

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

1、Description

This data set contains meteorological observation data of meteorological elements from January 1, 2017 to December 31, 2017 at guokou station on heihewen meteorological observation network.The station is located in da dong shu pass, qilian county, qinghai province.The latitude and longitude of the observation point are 100.2421E, 38.0142N, and 4148m above sea level.The published data include air temperature and relative humidity sensors set up at 5m, facing due north;The barometer is installed in an anti-skid box on the ground;The inverted bucket rain gauge is installed at 2m;Wind speed and direction sensors are set at 10m, facing due north;The four-component radiometer is at the meteorological tower 6m, facing due south;The two infrared thermometers are installed at the position of 6m, facing south, and the probe is facing vertically downward.The soil temperature probe is buried at 0cm on the surface and 4cm, 10cm, 20cm, 40cm, 80cm, 120cm and 160cm underground.The soil water probe is buried in the ground 4cm, 10cm, 20cm, 40cm, 80cm, 120cm and 160cm.The soil hot plate is buried 6cm underground, due south of 2m from the weather 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:C), soil heat flux (Gs\_1, Gs\_2, Gs\_3) (unit: watts/m2), soil temperature (Ts\_0cm, Ts\_4cm, Ts\_10cm, Ts\_20cm, Ts\_40cm, Ts\_80cm, Ts\_120cm, Ts\_160cm) (unit: Celsius), soil moisture (Ms\_4cm, Ms\_10cm, Ms\_20cm, Ms\_40cm, Ms\_40cm, Ms\_80cm, Ms\_120cm, Ms\_160cm) (unit: volume water content, percentage).
Processing and quality control of observation data :(1) ensure 144 data per day (every 10min). If data is missing, it will be marked by -6999;(2) eliminate the moments with duplicate records;(3) data that is obviously beyond the physical meaning or the range of the instrument is deleted;(4) the part marked by red letter in the data is the data in question;(5) the format of date and time is uniform, and the date and time are in the same column.For example, the time is: 2017-9-10-10:30;(6) the naming rule is: AWS+ site name.
Please refer to Liu et al. (2018) for hydrometeorological network or site information, and Liu et al. (2011) for observation data processing.

2、Keywords

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

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：15.0MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.0142 | - |
| west：100.2421 | - | east：100.2421 |
| - | south：38.0142 | - |

5、Time frame:2017-01-16 16:00:00+00:00--2018-01-15 16:00:00+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 Yakou station, 2017). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.14.2018.db2018

References to articles:

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.

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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