A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of hydro-meteorological observation network (automatic weather station of Dashalong station, 2017)**

1、Description

The data set contains the observation data of meteorological elements from the Dashalong Station,,which is located along the upper reaches of the Heihe Hydro-meteorological Observation Network, and the data set covers data from January 1, 2017 to December 31, 2017. The station is located in Shalong Beach area on the west side of Qilian County, Qinghai Province. The underlying surface is swamp meadow. The latitude and longitude of the observation point is 98.9406E, 38.8399N, and the altitude is 3739m. The air temperature and relative humidity sensors are erected 5 meters above the ground, facing North; the barometer is installed in the pick-proof box on the ground; the tipping bucket rain gauge is erected 10 meters above the ground; the wind speed and direction sensor is set 10 meters above the ground, facing North; the four-component radiometer is installed 6 meters above the ground, facing South; two infrared thermometers are installed 6 meters above the ground, facing South, and the probe orientation is vertical downward; the soil temperature probes are buried respectively at 0cm on the ground surface, 4cm、10cm、20cm、40cm、80cm、120cm and 160cm under the ground, they are located 2 meters from the meteorological tower in the South; the soil moisture sensors are buried 4cm、10cm、20cm、40cm、80cm、120cm and 160cm under the ground, 2 meters from the meteorological tower in the South; the soil heat flow boards (3 pieces) are buried 6cm under the ground, 2 meters from the meteorological tower in the South.
Observed items include: air temperature and humidity (Ta\_5m, RH\_5m) (unit: Celsius, percentage), air pressure (Press) (unit: hectopascal), precipitation (Rain) (unit: mm), wind speed (WS\_10m) (unit: meter / sec), wind direction (WD\_10m) (unit: degree), four-component radiation (DR, UR, DLR\_Cor, ULR\_Cor, Rn) (unit: watt / square meter), surface radiation temperature (IRT\_1, IRT\_2) (unit: Celsius) , soil heat flux (Gs\_1, Gs\_2, Gs\_3) (unit: watt / square meter), 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\_80cm, Ms\_120cm, Ms\_160cm) (unit: volumetric water content, percentage).
Processing and quality control of observation data: (1) Ensure 144 data per day (every 10 minutes), if there is missing data, it is marked as -6999. (2) Eliminate moments with duplicate records; (3) Remove data that is significantly beyond physical meaning or beyond the measuring range of the instrument; (4) Data marked by red is debatable; (5) The formats of the date and time are 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.
For hydro-meteorological network or site information, please refer to Liu et al. (2018). 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, Dashalong station
Time：2017-01-01 to 2017-12-31

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：11.6MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.8399 | - |
| west：98.9406 | - | east：98.9406 |
| - | south：38.8399 | - |

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 hydro-meteorological observation network (automatic weather station of Dashalong station, 2017). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.16.2018.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

7、Supporting project information

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