A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of hydrometeorological observation network (automatic weather station of Huazhaizi desert steppe station, 2017)**

1、Description

The data set contains meteorological element observation data of huazhaizi desert station in the middle reaches of heihe hydrological meteorological observation network from January 1, 2017 to December 31, 2017.The station is located in huazhaizi, zhangye city, gansu province.The latitude and longitude of huazhaizi station is 100.3201E, 38.7659N and 1731m above sea level.The observation items include: air temperature and relative humidity sensors at 5m and 10m, facing due north;Install the barometer inside the waterproof box;The tilting bucket rain gauge is installed at 10m;The wind speed and direction sensor is set at 5m and 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 of the surface and 2cm, 4cm, 10cm, 20cm, 40cm, 60cm and 100cm underground, 2m to the south of the meteorological tower.The soil water sensor is buried 2cm, 4cm, 10cm, 20cm, 40cm, 60cm and 100cm underground, 2m to the south of the meteorological tower.The soil hot plates (3 pieces) are buried 6cm underground.Specific observation elements are as follows:
Air temperature and humidity (Ta\_5m RH\_5m Ta\_10m, RH\_10m) (unit: c, percentage), pressure (Press) (unit: hundred mpa), precipitation (Rain) (unit: mm), wind speed (WS\_5m, 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) (in watts/m2), soil moisture (Ms\_2cm, Ms\_4cm, Ms\_10cm, Ms\_20cm, Ms\_40cm, Ms\_60cm, Ms\_100cm) (unit: volumetric water content, percentage), and soil temperature (Ts\_0cm, Ts\_2cm, Ts\_4cm, Ts\_10cm, Ts\_40cm, Ts\_60cm, Ts\_100cm) (unit: Celsius).
Processing and quality control of observation data :(1) ensure 144 data elements of observation data every day (every 10min), and mark by -6999 in case of data missing;From November to December 2017, due to wiring problems, there were discontinuous errors in long-wave radiation;(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: 2017-6-10:10:30;(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 artificial oasis experimental area in the middle reaches, huazhaizi desert steppe station
Time：2017, 2017-01-01 to 2017-12-31

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：12.7MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.7652 | - |
| west：100.3186 | - | east：100.3186 |
| - | south：38.7652 | - |

5、Time frame:2017-01-16 08:00:00+00:00--2018-01-15 08:00:00+00:00

6、Reference method

References to data:

TAN Junlei, LI Xin, LIU Shaomin, XU Ziwei, CHE Tao, REN Zhiguo. HiWATER: Dataset of hydrometeorological observation network (automatic weather station of Huazhaizi desert steppe station, 2017). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.19.2018.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.

7、Supporting project information

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