A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of hydrometeorological observation network (automatic weather station of Shenshawo sandy desert station, 2014)**

1、Description

The data set contains meteorological observation data of shenshawo desert station in the middle reaches of the hehe river meteorological observation network from January 1, 2014 to December 31, 2014.The station is located in shensha wo, zhangye city, gansu province.The latitude and longitude of the observation point are 100.4933e, 38.7892N, and 1594m above sea level.Air temperature and relative humidity sensors are set up at 5m and 10m, facing due north.The barometer is installed at 2m;The inverted bucket rain gauge is installed at 10m;The wind speed sensor is set up at 5m, 10m, and the wind direction sensor is set up at 10m, facing due north;The four-component radiometer is installed at 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 2cm, 4cm, 10cm, 20cm, 40cm, 60cm and 100cm underground, in the south due to 2m from the meteorological tower.Soil moisture sensors were buried in the ground at 2cm, 4cm, 10cm, 20cm, 40cm, 60cm and 100cm, respectively, in the south due to 2m from the meteorological tower.The soil hot flow plates (3) are successively buried in the ground at 6cm.  
Observation items are: 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) (unit: w/m), soil moisture (Ms\_2cm, Ms\_4cm, Ms\_10cm, Ms\_20cm, Ms\_40cm\_1, Ms\_40cm\_2, Ms\_60cm, Ms\_100cm) (unit: volume water content, percentage), and soil temperature (Ts\_0cm, Ts\_2cm, Ts\_4cm, Ts\_10cm, Ts\_20cm, Ts\_40cm, Ts\_60cm, Ts\_100cm) (unit: Celsius).  
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;Due to the adjustment of observation factors, some data were missing between 5.5-5.6, 2014.(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: 2014-6-10-10:30;(6) the naming rule is: AWS+ site name.  
Please refer to Li et al.(2013) 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 artificial oasis experimental area in the middle reaches, Shenshawo desert station  
Time：2014, 2014-01-01 to 2014-12-31

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：17.89MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.7892 | - |
| west：100.4933 | - | east：100.4933 |
| - | south：38.7892 | - |

5、Time frame:2014-01-08 08:00:00+00:00--2015-01-07 08:00:00+00:00

6、Reference method

References to data:

TAN Junlei, LI Xin, XU Ziwei, CHE Tao, REN Zhiguo. HiWATER: Dataset of hydrometeorological observation network (automatic weather station of Shenshawo sandy desert station, 2014). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.256.2015.db2016

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

National Natural Science Foundation of China

8、Data resource provider

name: XU Ziwei  
unit: Beijing Normal University  
email: xuzw@bnu.edu.cn  
  
name: TAN Junlei  
unit:   
email: tanjunlei@163.com  
  
name: REN Zhiguo  
unit: Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences  
email:   
  
name: LI Xin  
unit:   
email: xinli@itpcas.ac.cn  
  
name: CHE Tao  
unit:   
email: chetao@lzb.ac.cn