A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of hydrometeorological observation network (an automatic weather station of desert station, 2015)**

1、Description

This data set contains meteorological observation data of the downstream desert station of heihe hydrometeorological observation network from May 2, 2015 to December 31, 2015. The station is located at the ejin banner desert beach in Inner Mongolia, and the underlying surface is desert.The longitude and latitude of the observation point are 100.9872e, 42.1135n and 1054m above sea level.Air temperature and relative humidity sensors are set at 5m and 10m, facing due north;The barometer is installed at 2m;The tilting bucket rain gauge is installed at 10m;The wind speed sensor is set at 5m and 10m, and the wind 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 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.  
Observation projects 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) (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 observed data :(1) ensure 144 pieces of data every day (every 10min), and mark by -6999 in case of data missing;Soil heat flux 1 data was missing between May 11, 2015 and 6.6 due to sensor problems;(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: June 10, 2015, 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, Desert Station, the natural oasis eco-hydrology experimental area in the lower reaches  
Time：2015, 2015-01-01 to 2015-12-31

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：8.46MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.1135 | - |
| west：100.9872 | - | east：100.9872 |
| - | south：42.1135 | - |

5、Time frame:2015-01-13 08:00:00+00:00--2016-01-12 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 (an automatic weather station of desert station, 2015). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.317.2016.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

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: LIU Shaomin  
unit: Beijing Normal University  
email: smliu@bnu.edu.cn  
  
name: CHE Tao  
unit:   
email: chetao@lzb.ac.cn