A Big Earth Data Platform for Three Poles

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

1、Description

This data set contains data of meteorological elements observation system of farmland station downstream of heihe hydrometeorological observation network from January 1, 2015 to October 29, 2015.The station is located at sidao bridge, dalai hubu town, ejin banner, Inner Mongolia.The latitude and longitude of the observation point are 101.1338e, 42.0048n, and 875m above sea level.The four-component radiometer is installed at 6m, facing due south;The two infrared thermometer sensors are installed at the position of 6m, facing south, and the probe is facing vertically downward.The two photosynthetic radiometers are installed at the position of 6m, facing due south, and the probes are vertically up and down in one direction.The soil temperature probe is buried at 0cm on the surface, 2cm and 4cm underground, and 2m to the south of the meteorological tower.The soil moisture sensors are respectively buried 2cm and 4cm underground, in the south due to 2m from the meteorological tower.The soil hot flow plates (3) are successively buried in the ground 6cm away from the weather tower 2m due south.
Radiation observation projects are: four components (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 per square meter), soil temperature (Ts\_0cm Ts\_2cm Ts\_4cm) (unit: c), soil moisture (Ms\_2cm, Ms\_4cm) (unit:Volume water content, percentage), up and down photosynthetic effective radiation (PAR\_up, PAR\_down) (unit: micromole/m s).
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 data storage problems, data was missing from September 25 to October 01, 2015;Soil heat flux of 3 and 0cm soil temperature was missing between 6.14-6.22 due to sensor problems.Due to sensor problems, the soil temperature of 0cm occasionally appeared problems between 6.09 and 9.22.Soil heat flux 2 was missing between 10.17 and 10.29 due to sensor problems.(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: 2015-9-10-10:30;(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, cropland 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：11.3MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.0048 | - |
| west：101.1338 | - | east：101.1338 |
| - | south：42.0048 | - |

5、Time frame:2015-01-11 16:00:00+00:00--2016-01-10 16:00:00+00:00

6、Reference method

References to data:

TAN Junlei, LI Xin, XU Ziwei, CHE Tao, REN Zhiguo. HiWATER: Dataset of hydrometeorological observation network (an automatic weather station of Sidaoqiao cropland station, 2015). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.320.2016.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: CHE Tao
unit:
email: chetao@lzb.ac.cn