A Big Earth Data Platform for Three Poles

**HiWATER：Dataset of Hydro-meteorological Observation Network (An Automatic Weather Station of Sidaoqiao Barren-land Station, 2014)**

1、Description

The data set contains the observation data of meteorological elements from the Barren-land Station,which is located along the lower reaches of the Heihe Hydro-meteorological Observation Network, and the data set covers data from January 1, 2014 to December 31, 2014. The station is located in Sidaoqiao,Dalaihubu Town, Ejina Banner, Inner Mongolia. The underlying surface is barren land. The latitude and longitude of the observation point is 101.1326E, 41.9993N, and the altitude is 878m. 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, 2cm and 4cm under the ground, they are located 2 meters from the meteorological tower in the South; the soil moisture sensors (installed on March 15,2014) are buried 2cm and 4cm 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: 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 moisture (Ms\_2cm , Ms\_4cm) (unit: volumetric water content, percentage), soil temperature (Ts\_0cm, Ts\_2cm, Ts\_4cm) (unit: Celsius).
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. The surface radiation temperature IRT2 data during October 12,2014 to November 8,2014 is missing because of sensor problem; Some 2cm soil moisture data during March21 to March 29 and October 12 to November 8 is missing due to probe problem. (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: 2014-9-10 10:30; (6) The naming rule is: AWS + site name.
For hydro-meteorological network or site information, please refer to Li et al. (2013). For observation data processing, please refer to Liu et al. (2011).

2、Keywords

Theme：Precipitation,Meteorological element
Discipline：Atmosphere
Places：Heihe River Basin, barren-land station, the natural oasis eco-hydrology experimental area in the lower reaches
Time：2014, 2014-01-01 to 2014-12-31

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：2.61MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：41.9903 | - |
| west：101.1326 | - | east：101.1326 |
| - | south：41.9903 | - |

5、Time frame:2014-01-07 08:00:00+00:00--2015-01-06 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 Hydro-meteorological Observation Network (An Automatic Weather Station of Sidaoqiao Barren-land Station, 2014). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.262.2015.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

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