A Big Earth Data Platform for Three Poles

**Qilian Mountains integrated observatory network: Dataset of Heihe integrated observatory network (automatic weather station of Dashalong station, 2018)**

1、Description

This dataset includes data recorded by the Heihe integrated observatory network obtained from the automatic weather station (AWS) at the observation system of Meteorological elements gradient of Dashalong station from January 1 to December 31, 2018. The site (98.941° E, 38.840° N) was located on a swamp meadow surface in the Longshatan, which is near west of Qilian county, Qinghai Province. The elevation is 3739 m. The installation heights and orientations of different sensors and measured quantities were as follows: air temperature and humidity profile (HMP45C; 5 m, north), wind speed and direction profile (010C/020C; 10 m, north), air pressure (PTB110; in the tamper box on the ground), rain gauge (TE525M; 10 m), four-component radiometer (CNR1; 6 m, south), two infrared temperature sensors (SI-111; 6 m, south, vertically downward), soil heat flux (HFP01; 3 duplicates, -0.06 m), soil temperature profile (109ss-L; 0, -0.04, -0.1, -0.2, -0.4, -0.8, -1.2, and -1.6 m), and soil moisture profile (CS616; -0.04, -0.1, -0.2, -0.4, -0.8, -1.2, and -1.6 m).
The observations included the following: air temperature and humidity (Ta\_5 m; RH\_5 m) (℃ and %, respectively), wind speed (Ws\_10 m) (m/s), wind direction (WD\_10 m) (°), air pressure (press) (hpa), precipitation (rain) (mm), four-component radiation (DR, incoming shortwave radiation; UR, outgoing shortwave radiation; DLR\_Cor, incoming longwave radiation; ULR\_Cor, outgoing longwave radiation; Rn, net radiation) (W/m^2), infrared temperature (IRT\_1 and IRT\_2) (℃), soil heat flux (Gs\_1, Gs\_2 and Gs\_3) (W/m^2), soil temperature (Ts\_0 cm, Ts\_4 cm, Ts\_10 cm, Ts\_20 cm, Ts\_40 cm, Ts\_80 cm, Ts\_120 cm, and Ts\_160 cm) (℃), and soil moisture (Ms\_4 cm, Ms\_10 cm, Ms\_20 cm, Ms\_40 cm, Ms\_80 cm, Ms\_120 cm, and Ms\_160 cm) (%, volumetric water content).
The data processing and quality control steps were as follows: (1) The AWS data were averaged over intervals of 10 min for a total of 144 records per day. The missing data were denoted by -6999. (2) Data in duplicate records were rejected. (3) Unphysical data were rejected. (4) The data marked in red are problematic data. (5) The format of the date and time was unified, and the date and time were collected in the same column, for example, date and time: 2018-9-10 10:30. (6) Finally, the naming convention was AWS+ site no. Moreover, suspicious data were marked in red.
For more information, please refer to Liu et al. (2018) (for sites information), Liu et al. (2011) for data processing) in the Citation section.

2、Keywords

Theme：Precipitation,Meteorological element
Discipline：Atmosphere
Places：the cold region hydrology experimental area, Heihe River Basin, Dashalong station
Time：2018

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：11.5MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.84 | - |
| west：98.941 | - | east：98.941 |
| - | south：38.84 | - |

5、Time frame:2018-01-24 16:00:00+00:00--2019-01-23 16:00:00+00:00

6、Reference method

References to data:

TAN Junlei, LI Xin, LIU Shaomin, XU Ziwei, CHE Tao, ZHANG Yang, REN Zhiguo. Qilian Mountains integrated observatory network: Dataset of Heihe integrated observatory network (automatic weather station of Dashalong station, 2018). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2707792019

References to articles:

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.

Che, T., Li, X., Liu, S., Li, H., Xu, Z., Tan, J., Zhang, Y., Ren, Z., Xiao, L., Deng, J., Jin, R., Ma, M., Wang, J., & Yang, X. (2019). Integrated hydrometeorological, snow and frozen-ground observations in the alpine region of the Heihe River Basin, China. Earth System Science Data, 11, 1483-1499

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.

7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program
the National Natural Science Foundation of China “Key Theory and Methods for Validation of Land Surface Remote Sensing Products”

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: ZHANG Yang
unit:
email: zhangyang@lzb.ac.cn

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