A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of hydrometeorological observation network (eddy covariance system of Dashalong station, 2016)**

1、Description

This data set contains the observation data of vorticity correlativity at da-sharon station, upstream of heihe hydrometeorological observation network, from January 27, 2016 to December 31, 2016.The station is located in qilian county, qinghai province.The longitude and latitude of the observation point are 98.9406e, 38.8399N and 3739 m above sea level.The rack height of the vortex correlativity meter is 4.5m, the sampling frequency is 10Hz, the ultrasonic orientation is due north, and the distance between the ultrasonic wind speed and temperature meter (CSAT3) and CO2/H2O analyzer (Li7500) is 15cm.  
The original observation data of the vortex correlativity instrument is 10Hz, and the published data is the 30-minute data processed by Eddypro software. The main processing steps include: outliers, delay time correction, coordinate rotation (quadratic coordinate rotation), frequency response correction, ultrasonic virtual temperature correction and density (WPL) correction.Quality assessment for each intercompared to at the same time, mainly is the atmospheric stability (Δ st) and turbulent characteristics of similarity (ITC) test.The 30min pass value output by Eddypro software was also screened :(1) data when instrument error was eliminated;(2) data of 1h before and after precipitation are excluded;(3) remove the data with a missing rate of more than 10% in the original 10Hz data within every 30 minutes;(4) the observation data of weak turbulence at night (u\* less than 0.1m/s) were excluded.The average observation period was 30 minutes, 48 data per day, and the missing data was marked as -6999.Suspicious data caused by instrument drift, etc., shall be marked in red font.Calibration of Li7500 in May 2-3, data missing;When 10Hz data is missing due to a problem with the storage card (3.20-5.01), the data will be replaced by 30min flux data output by the collector.  
The published observational data include:Date/Time for the Date/Time, wind Wdir (°), Wnd horizontal wind speed (m/s), standard deviation Std\_Uy lateral wind speed (m/s), ultrasonic virtual temperature Tv (℃), the water vapor density H2O (g/m3), carbon dioxide concentration CO2 (mg/m3), friction velocity Ustar) (m/s), Mr. Hoff length L (m), sensible heat flux Hs (W/m2), latent heat flux LE (W/m2), carbon dioxide flux Fc (mg/(m2s)), the quality of the sensible heat flux identifier QA\_Hs, the quality of the latent heat flux identifier QA\_LE,Quality indicator for co2 flux QA\_Fc.The quality of the sensible heat and latent heat, carbon dioxide flux identification is divided into three (quality id 0: (Δ st < 30, the ITC < 30);1: (Δ st < 100, ITC < 100);The rest is 2).The meaning of data time, such as 0:30 represents the average of 0:00-0:30;The data is stored in \*.xls format.  
For information of hydrometeorological network or station, please refer to Liu et al. (2018), and for observation data processing, please refer to Liu et al. (2011).

2、Keywords

Theme：Latent heat flux,Radiation,Carbon dioxide flux,Sensible heat flux  
Discipline：Atmosphere  
Places：Heihe River Basin, the cold region hydrology experimental area in the upper reaches, Dashalong station  
Time：2016-01-27 to 2016-12-31, 2016

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：2.66MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.8399 | - |
| west：98.9406 | - | east：98.9406 |
| - | south：38.8399 | - |

5、Time frame:2016-02-10 00:00:00+00:00--2017-01-14 00:00:00+00:00

6、Reference method

References to data:

TAN Junlei, LI Xin, XU Ziwei, CHE Tao, ZHANG Yang. HiWATER: Dataset of hydrometeorological observation network (eddy covariance system of Dashalong station, 2016). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.447.2017.db2017

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.  
  
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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: ZHANG Yang  
unit:   
email: zhangyang@lzb.ac.cn  
  
name: LI Xin  
unit:   
email: xinli@itpcas.ac.cn  
  
name: CHE Tao  
unit:   
email: chetao@lzb.ac.cn