A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of hydrometeorological observation network (large aperture scintillometer of Sidaoqiao Superstation, 2016)**

1、Description

The data set contains the flux observation data of scintillator with large aperture from sidaoqiao station downstream of heihe hydrometeorological observation network.A large aperture scintillator of BLS900 type is installed in the downstream. The north tower is the receiving end and the south tower is the transmitting end.The observation time is from January 1, 2016 to December 31, 2016.The site is located in ejin banner, Inner Mongolia, with tamarix chinensis, populus populus, bare land and cultivated land under it.The latitude and longitude of the north tower is 101.137e, 42.008n, and the latitude and longitude of the south tower is 101.131e, 41.987 N, with an elevation of about 873m.The effective height of the large aperture scintillator is 25.5m, the optical diameter length is 2350m and the sampling frequency is 1min.
Large aperture flicker meter raw observation data for 1 min, data released for after processing and quality control of data, including sensible heat flux is mainly combined with the automatic meteorological station observation data, based on similarity theory alonzo mourning - Mr. Hoff is obtained by iterative calculation, the quality control of the main steps include: (1) excluding Cn2 reach saturation data (e-14 Cn2 > 7.58);(2) data with weak demodulation signal strength (Average X Intensity<1000) were eliminated;(3) data at the time of precipitation were excluded;(4) data of weak turbulence under stable conditions were excluded (u\* < 0.1m/s).During the iterative calculation, the stability universal function of Thiermann and Grassl(1992) was selected.Please refer to Liu et al(2011, 2013) for detailed introduction.From June 8 to 16, 2016, the measurement signal of large aperture scintillator was relatively small, resulting in a large number of missing data.
A few notes on published data :(1) data missing time is marked by -6999.(2) data table head: Date/Time: Date/Time (format: yyyy/m/d h:mm), Cn2: structural parameters of air refraction index (unit: m-2/3), H\_LAS: sensible heat flux (unit: W/m2).The meaning of data time, such as 0:30 represents the average between 0:00 and 0:30;The data is stored in \*.xls format.
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：Radiation,Sensible heat flux
Discipline：Atmosphere
Places：Heihe River Basin, Sidaoqiao superstation, the natural oasis eco-hydrology experimental area in the lower reaches
Time：2016-01-01 to 2016-04-24, 2016-02-11 to 2016-12-31, 2016

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：0.64MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.005 | - |
| west：101.147 | - | east：101.147 |
| - | south：42.005 | - |

5、Time frame:2016-01-13 00:00:00+00:00--2016-05-06 00:00:00+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 (large aperture scintillometer of Sidaoqiao Superstation, 2016). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.442.2017.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.

7、Supporting project information

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