A Big Earth Data Platform for Three Poles

**Multi-scale surface flux and meteorological elements observation dataset in the Hai River Basin (Huailai station-lysimeters, 2013)**

1、Description

The data set contains the observation data of the evapotranspiration apparatus on January 1, 2013 (solstice) and December 31, 2013.The site is located in huailai county, hebei province, east garden town, the underlying surface for corn.The latitude and longitude of the observation point is 115.7880E, 40.3491N, and the altitude is 480m.
The collection frequency of evapotranspiration permeameter is 1 time/minute, and the released data is the average of 10 minutes.The evapotranspiration meter is a cylindrical structure with a surface area of 1m2 and a buried depth of 1.5m. The observation accuracy of evapotranspiration is 0.01mm.Two evapotranspiration seeptometers were installed, one kept bare soil (lysimeter\_1), the other for the corn underlay (lysimeter\_2) during the growing season (May 10 - September 15).Soil temperature and humidity probe, soil water potential probe and soil heat flow plate are also installed in the evapotranspiration apparatus.The buried depth of the soil temperature sensor is 5cm, 30cm, 50cm, 100cm and 140cm.The buried depth of the soil water sensor is 2cm, 10cm, 20cm and 40cm.The soil heat flux plate is buried 10cm underground;The buried depth of the soil water potential sensor was 30cm and 140cm.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;(2) delete the data of observation anomalies caused during maintenance;(3) data that is obviously beyond the physical meaning or the range of the instrument is deleted;(4) the format of date and time is unified, and the date and time are in the same column.For example, the time is: 2013-6-10-10:30.
The observation data released by the evapotranspiration permeameter include:Date/Time, weighing mass (i.l.\_1\_wag\_l\_000 (Kg), i.l.\_2\_wag\_l\_000 (Kg)), seepage mass (i.l.\_1\_wag\_d\_000 (Kg), i.l.\_2\_wag\_d\_000 (Kg)), soil heat flux (Gs\_1\_10cm, Gs\_2\_10cm) (W/m2),Multi-layer soil moisture (Ms\_1\_2cm, Ms\_1\_10cm, Ms\_1\_20cm, Ms\_1\_40cm, Ms\_2\_2cm, Ms\_2\_10cm, Ms\_2\_20cm, Ms\_2\_40cm) (%),Multi-layer soil temperature (Ts\_1\_5cm, Ts\_1\_30cm, Ts\_1\_50cm, Ts\_1\_100cm, Ts\_1\_140cm, Ts\_2\_140cm, ts\_2\_2\_5cm, ts\_2\_2\_50cm, Ts\_2\_100cm, Ts\_2\_140cm) (℃), soil water potential (TS\_1\_30 (hPa), TS\_1\_140 (hPa), TS\_2\_30 (hPa), TS\_2\_30 (hPa), TS\_2\_140 (hPa), TS\_2\_140 (hPa));The data is stored in \*.xls format.
Guo et al, 2020 is used for site introduction and Liu et al, 2013 for data processing

2、Keywords

Theme：Soil,Lysimeter,Soil moisture/Water content,Soil heat flux
Discipline：Atmosphere,Terrestrial Surface
Places：Huailai, Hebei, Haihe river basin
Time：2013

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：2.6MB

4.Data format：EXCEL

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：40.3491 | - |
| west：115.788 | - | east：115.788 |
| - | south：40.3491 | - |

5、Time frame:2013-07-10 16:00:00+00:00--2014-07-09 16:00:00+00:00

6、Reference method

References to data:

LIU Shaomin, XU Ziwei, ZHU Zhongli, XIAO Qing. Multi-scale surface flux and meteorological elements observation dataset in the Hai River Basin (Huailai station-lysimeters, 2013). A Big Earth Data Platform for Three Poles, doi:10.3972/haihe.013.2015.db2017

References to articles:

Guo, A.L., Liu, S.M., Zhu, Z.L., Xu, Z.W., Xiao, Q., Ju, Q., Zhang, Y., & Yang, X.F. (2020). Impact of Lake/Reservoir Expansion and Shrinkage on Energy and Water Vapor Fluxes in the Surrounding Area. Journal of Geophysical Research: Atmospheres, 125, e2020JD032833. https://doi.org/10.1029/2020JD032833.

Liu, S.M., Xu, Z.W., Zhu, Z.L., Jia, Z.Z., &Zhu, M.J. (2013). Measurements of evapotranspiration from eddy-covariance systems and large aperture scintillometers in the Hai River Basin, China. Journal of Hydrology, 487, 24-38.

7、Supporting project information

8、Data resource provider

name: ZHU Zhongli
unit:
email: zhuzl@bnu.edu.cn

name: XU Ziwei
unit: Beijing Normal University
email: xuzw@bnu.edu.cn

name: XIAO Qing
unit: Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences
email: xiaoqing@irsa.ac.cn

name: LIU Shaomin
unit: Beijing Normal University
email: smliu@bnu.edu.cn