A Big Earth Data Platform for Three Poles

**HiWATER：Dataset of Hydrometeorological observation network (Thermal Dissipation sap flow velocity Probe-2014)**

1、Description

The data set contains the observation data of thermal diffusion fluid flow meters at the downstream mixed forest station and eupoplar forest station of the hydrometeorological observation network from January 1 to December 31, 2014. La shan au in the study area is located in the Inner Mongolia autonomous region of mesozoic-cenozoic in iminqak, according to the different height and diameter at breast height of iminqak, choose sampling tree installation TDP (Thermal Dissipation SAP flow velocity Probe, Thermal diffusion flow meter), domestic TDP pin type Thermal diffusion stem flow meter, the model for TDP30.The sample sites are TDP1 point and TDP2 point respectively, which are located near the mixed forest station and populus populus station.The height of the sample tree is TDP2 and TDP1 from high to low, and the diameter of the chest is TDP1 and TDP2 from large to small, so as to measure the trunk fluid flow on behalf of the whole area.The installation height of the probe is 1.3 meters and the installation orientation is due east and west of the sample tree.
The original observation data of TDP is the temperature difference between probes, which is collected once for 10s and the average output period is 10 minutes.The published data are calculated and processed trunk flow data, including flow rate (cm/h), flux (cm3/h) and daily transpiration (mm/d) per 10 minutes.Firstly, the liquid flow rate and liquid flux were calculated according to the temperature difference between the probes, and then the transpiration Q per unit area of the forest zone was calculated according to the area of Euphrates poplar forest and the distance between trees at the observation points.At the same time, post-processing was carried out on the calculated rate and flux value :(1) data that obviously exceeded the physical significance or the instrument range were removed;(2) the missing data is marked with -6999;Among them, the data of TDP2 was missing due to power supply problems from 1.1-2.8 days, and the data of the third group of probes was missing from 2.8-3.13 days due to the problems of the third group of probes.(3) suspicious data caused by probe fault or other reasons shall be identified in red, and the data confirmed to have problems shall be removed.
Please refer to Li et al.(2013) for hydrometeorological network or site information, and Qiao et al.(2015) for observation data processing.

2、Keywords

Theme：Vegetation,Canopy interception,Evapotranspiration,Thermal dissipation sap flow velocity probe（TDP）
Discipline：Terrestrial Surface
Places：Heihe River Basin, 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：15.26MB

4.Data format：EXCEL

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：41.99 | - |
| west：101.1346 | - | east：101.1346 |
| - | south：41.99 | - |

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 Hydrometeorological observation network (Thermal Dissipation sap flow velocity Probe-2014). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.234.2015.db2016

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Li X, Cheng GD, Liu SM, Xiao Q, Ma MG, Jin R, Che T, Liu QH, Wang WZ, Qi Y, Wen JG, Li HY, Zhu GF, Guo JW, Ran YH, Wang SG, Zhu ZL, Zhou J, Hu XL, Xu ZW. Heihe Watershed Allied Telemetry Experimental Research (HiWATER): Scientific objectives and experimental design. Bulletin of the American Meteorological Society, 2013, 94(8): 1145-1160, 10.1175/BAMS-D-12-00154.1.

Liu SM, Li X, Xu ZW, Che T, Xiao Q, Ma MG, Liu QH, Jin R, Guo JW, Wang LX, Wang WZ, Qi Y, Li HY, Xu TR, Ran YH, Hu XL, Shi SJ, Zhu ZL, Tan JL, Zhang Y, Ren ZG. The Heihe Integrated Observatory Network: A basin-scale land surface processes observatory in China. Vadose Zone Journal, 2018, 17:180072. doi:10.2136/vzj2018.04.0072.

7、Supporting project information

National Natural Science Foundation of China

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: 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