A Big Earth Data Platform for Three Poles

**HiWATER: Multi-scale observation experiment on land surface temperature-dataset of component temperature in the down of Heihe River Basin (Thermal infrared radiometer) (2014-2016)**

1、Description

This dataset includes component temperatures measured by the thermal infrared (TIR) radiometers at the Mixed Forest and Sidaoqiao stations between 22 July, 2014 and 19 July, 2016. The Mixed Forest (101.1335 °E, 41.9903 °N, 874 m.a.s.l.) and Sidaoqiao (101.1374 °E, 42.0012 °N, 873 m.a.s.l.) stations were located in the downstream of the Heihe River basin, Dalaihubu Town, Ejin Banner, Inner Mongolia.   
At the Mixed Forest station, two TIR radiometers (SI-111, Apogee Instruments Inc., USA) connected to a data logger (CR800, Campbell Scientific Inc., USA) measured component temperatures of the sunlit canopy and shaded canopy. TIR radiometers were mounted horizontally at 5 m height on iron rods just south and north of a tree and pointed to its canopy. The distance from the sensor to the canopy was ~1 m. At the Sidaoqiao station, two SI-111 TIR radiometers connected to a CR800 data logger measured component temperatures of the soil and shrub. The first sensor pointed from 2 m height under a viewing zenith angle of 45° to bare soil; the second sensor was mounted at 1-m height and pointed horizontally into the shrub canopy.

2、Keywords

Theme：Component temperature,Synchronous observation,Terrestrial Surface Remote Sensing  
Discipline：Terrestrial Surface  
Places：mixed forest station, Sidaoqiao superstation, the natural oasis eco-hydrology experimental area in the lower reaches, Heihe River Basin  
Time：7-22-2014 to 7-19-2016

3、Data details

1.Scale：None

2.Projection：

3.Filesize：22.2MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：41.9903 | - |
| west：101.1335 | - | east：101.1335 |
| - | south：41.9903 | - |

5、Time frame:2014-07-28 16:00:00+00:00--2016-07-25 16:00:00+00:00

6、Reference method

References to data:

LI Mingsong , ZHOU Ji, MA Jin . HiWATER: Multi-scale observation experiment on land surface temperature-dataset of component temperature in the down of Heihe River Basin (Thermal infrared radiometer) (2014-2016). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2709792019

References to articles:

Li, M., Zhou, J., Peng, Z., Liu, S., Göttsche, F.-M., Zhang, X., Song, L., 2019. Component radiative temperatures over sparsely vegetated surfaces and their potential for upscaling land surface temperature. Agricultural and Forest Meteorology, 276–277. https://doi.org/10.1016/j.agrformet.2019.05.031  
  
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

8、Data resource provider

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