A Big Earth Data Platform for Three Poles

**HiWATER: MUlti-scale observation experiment on land surface temperature (MUSOES)- dataset of component temperature in the down of Heihe River Basin (Thermal imager)**

1、Description

This dataset includes component temperatures measured by the thermal imager at the Mixed Forest and Sidaoqiao stations between 23 July and 18 August, 2014. 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, a Testo 890-2 thermal imager (Testo Inc., Germany) with a resolution of 640 × 480 pixels was employed to acquire brightness temperature images. The imager was manually operated from a 10-m height platform of the tower between 10:00-16:00 (China Standard Time, CST) with an observation interval of 1-h on cloudless days. On August 4th observations were acquired between 11:00 and 17:00 at an interval of 10-min to match observations acquired with an airborne TIR imager. The ground based imager was pointed to five viewing directions (southeast-SE, east-E, northeast-NE, northwest-NW, and southwest-SW) and was inclined 25°–45° below the horizon depending on viewing direction. At Sidaoqiao station, a Testo 875-2i imager (Testo Inc., Germany) with a resolution of 160 × 120 pixels was manually operated from a 10-m high platform to acquire brightness temperature images in directions SW, SE, NE, and NW. Depending on the targets in each viewing direction, the imager was inclined to 30°–45° below the horizon. Observations at Sidaoqiao and Mixed Forest stations were almost synchronous. Furthermore, visible images were taken simultaneously with the aforementioned two TIR imagers (2048 × 1536 pixels for Testo 890-2 and 640 × 480 pixels for Testo 875-2i).

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：07-23-2014 to 08-18-2014

3、Data details

1.Scale：None

2.Projection：

3.Filesize：3375.0MB

4.Data format：None

4、Space scope

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

5、Time frame:2014-07-30 12:00:00+00:00--2014-08-25 13:59:59+00:00

6、Reference method

References to data:

LI Mingsong , ZHOU Ji, MA Jin . HiWATER: MUlti-scale observation experiment on land surface temperature (MUSOES)- dataset of component temperature in the down of Heihe River Basin (Thermal imager). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2709782019

References to articles:

Li, M., Zhou, J., Peng, Z., Liu, S., Göttsche, F., 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

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7、Supporting project information

8、Data resource provider

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