A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of surface temperature and albedo on village roof in the middle reaches of the Heihe River Basin**

1、Description

A land surface temperature and upward/downward shortwave radiation observation system was set up on the roof, which locate on the edge of No.4 eddy covariance system (EC4) of the MUlti-Scale Observation EXperiment on Evapotranspiration over heterogeneous land surfaces 2012 (MUSOEXE-12). This observation site can offer in situ calibration data for TASI, WiDAS and L band sensor used in aerospace experiment.  
Observation Site:  
This point is located in a large and homogeneous adobe roof in Shiqiao Village, Xiaoman Town, Zhangye City. Land surface of observation site is relatively flat and uniform, and also not tall trees around. It’s about 20 meters away from southwest No.4 eddy covariance system (EC4) observation points. The coordinates of this site: 38°52′38.50″ N，100°21′27.00″ E。  
Observation Instrument:  
Observation system is composed of a SI-111 infrared radiometer (Campbell, USA) installed vertically downward, two CMP3 pyranometer (Kipp&Zonen, Netherlands) one upward, another downward. Observation height is 1.0 m, data logging by a Campbell CR850 logger.   
Sensor orientation：  
Observation mounting arm has 3 m long, parallel to roof edge, azimuth angle: 156° (East by south 66°)  
Observation Time:  
This site operates from 23 June, 2012 to 20 September, 2012. Observation data laagered by every 5 seconds uninterrupted. Output data contained sample data of every 5 seconds and mean data of 1 minute.  
Accessory data:  
Land surface (adobe roof) temperature, downward/upward total solar radiation, surface albedo. Dataset is stored in \*.dat file, which can be read by Microsoft excel or other text processing software (UltraEdit, et. al). Table heads meaning: Rs\_downwell, downward shortwave radiation (W/m^2); Rs\_upwell, upward (reflect) shortwave radiation (W/m^2); albedo, calculate by Rs\_upwell/ Rs\_downwell. SBT\_C, body temperature of SI-111 sensor (℃); Target\_C, Target of surface temperature (℃). Dataset is stored day by day, named as: data format + site name + interval time + date + time. The detailed information about data item showed in data header introduction in dataset.

2、Keywords

Theme：Surface radiation temperature,Earth SurFace Processes,Albedo  
Discipline：Terrestrial Surface  
Places：Heihe River Basin, the artificial oasis experimental area in the middle reaches, roof  
Time：2012, 2012-06-23 to 2012-09-20

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：0.0MB

4.Data format：文本, \*.dat后缀

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.87736111 | - |
| west：100.3575 | - | east：100.3575 |
| - | south：38.87736111 | - |

5、Time frame:2012-07-02 16:05:00+00:00--2012-09-29 16:05:00+00:00

6、Reference method

References to data:

MA Mingguo. HiWATER: Dataset of surface temperature and albedo on village roof in the middle reaches of the Heihe River Basin. A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.029.2013.db2017

References to articles:

Li, X., Liu, S.M., Xiao, Q., Ma, M.G., Jin, R., Che, T., Wang, W.Z., Hu, X.L., Xu, Z.W., Wen, J.G., Wang, L.X. (2017). A multiscale dataset for understanding complex eco-hydrological processes in a heterogeneous oasis system. Scientific Data, 4, 170083. doi:10.1038/sdata.2017.83.

7、Supporting project information

Heihe Watershed Allied Telemetry Experimental Research (HiWATER)

8、Data resource provider

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