A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of BRDF observations in the midstream of the Heihe River Basin**

1、Description

This dataset includes the BRF observations of the corn in the Daman site (100.372° E, 38.855° N) on 29-6-2012) and the desert site around the airport (100.700° E, 38.762° N) acquired on 8-7-2012.
Instruments: SVC-HR1024 from IRSA, reference board from IRSA, the multi-angular auto-observing shelf developed by BNU
Measurement methods: we measure the BRF in the unit of observing plane, i.e. fix the view azimuth then change the view zenith angle to measure the target spectra, including along the principle plane and cross the principle plane at different sun angle. Besides, the planes along and cross the ridge of corn are also measured, specific planes like 0° , 90° away from the north are also observed in the desert. In each observing plane, view zenith angles from -60° to 60° with a interval of 10° are observed. The fiber optic probe with a view field of 25° is fixed at the multi-angular shelf at a height of 5 meters. The spectrum measured by the SVC-HR1024 is ranged from 350 nm-2500 nm. In each plane measurement , the spectral radiance of the reference board is measured first, then the target radiance of different view zenith angle is measured, finally the reference board radiance is measured again.
Dataset contains the originally recorded data like the spectra (in sig format) and the log files (in txt format), and the processed data BRDF (in txt format and jpg format). The processed data in the format of txt, contains the observing geometries and corresponding reflectance spectra from 350 nm to 2500 nm. The processed data in the format of jpg, is a quick view of the BRF at 550 nm, 650 nm and 850 nm of each observing plane.

2、Keywords

Theme：Radiation,Reflectance
Discipline：Atmosphere
Places：Heihe River Basin, the artificial oasis experimental area in the middle reaches, Zhanye Airport, Daman Superstation
Time：2012-07-08, 2012, 2012-06-29

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：50.0MB

4.Data format：文本, \*.sig后缀

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.855 | - |
| west：100.372 | - | east：100.372 |
| - | south：38.855 | - |

5、Time frame:2018-11-23 02:49:24+00:00--2018-11-23 02:49:24+00:00

6、Reference method

References to data:

MA Mingguo, Wen Jianguang, XIAO Qing. HiWATER: Dataset of BRDF observations in the midstream of the Heihe River Basin. A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.026.2013.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)
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8、Data resource provider

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