A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of emissivity of typical terrain over Heihe River Basin (2014.03.25-2015.06.30)**

1、Description

This data set is typical specific emissivity data set of Heihe River Basin. Data observation is from March 25, 2014 to June 30, 2015.
Instrument: Portable Fourier transform infrared spectrometer (102f), hand-held infrared thermometer
Measurement method: 102f was used to measure the radiation values of cold blackbody, warm blackbody, observation target and gold plate. Using the radiation value of the cold and warm blackbody, the 102f is calibrated to eliminate the influence of the instrument's own emission. By using the iterative inversion algorithm based on smoothness, the specific emissivity and the object temperature are inversed. The specific emissivity range is 8-14 μ m, and the resolution is 4cm-1. This data set contains the original radiation curves (in ASCII format) and recording files of cold blackbody, warm blackbody, measured target and gold plate obtained by 102f.

2、Keywords

Theme：Emissivity,Radiation,Infrared spectrometer,Remote Sensing Technology
Discipline：Atmosphere,Remote Sensing Technology
Places：Heihe River Basin, desert, desert, wetland, crop land,
Time：2014, 2015, 2014-03-25 to 2015-06-30

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：647.0MB

4.Data format：\*.cbx, \*.wbx, \*.sax, \*.dwx, \*.doc, \*.jpg, \*.img, \*.emiss

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.117 | - |
| west：97.017 | - | east：102.0 |
| - | south：37.117 | - |

5、Time frame:2014-04-06 19:00:00+00:00--2015-07-12 19:00:00+00:00

6、Reference method

References to data:

TAN Junlei, MA Mingguo, Li Yimeng, YU Wenping, REN Zhiguo, WANG Haibo. HiWATER: Dataset of emissivity of typical terrain over Heihe River Basin (2014.03.25-2015.06.30). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.282.2015.db2016

References to articles:

Ma Mingguo, Che Tao, Li Xin, Xiao Qing, Zhao Kai and Xin Xiaoping. A Prototype Network for Remote Sensing Validation in China. Remote Sensing, 2015, 7: 5187-5202.

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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