A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of sun photometer observations in the middle and upper reaches of the Heihe River Basin (2012)**

1、Description

The object of this dataset is to support the atmospheric correction data for the satellite and airborne remote-sensing. It provides the atmospheric aerosol and the column content of water vapor. The dataset is sectioned into two parts: the conventional observations data and the observations data synchronized with the airborne experiments. The instrument was on the roof of the 7# in the Wuxing Jiayuan community from 1 to 24 in June. After 25 June, it was moved to the ditch in the south of the Supperstaiton 15. The dataset provide the raw observations data and the retrieval data which contains the atmosphere aerosol optical depth (AOD) of the wavebands at the center of 1640 nm, 1020 nm, 936 nm, 870 nm, 670 nm, 500 nm, 440 nm, 380 nm and 340 nm, respectively, and the water vapor content is retrieved from the band data with a centroid wavelength of 936 nm. The continuous data was obtained from the 1 June to 20 September in 2012 with a one minute temporal resolution. The time used in this dataset is in UTC+8 Time.  
Instrument:  
The sun photometer is employed to measure the character of atmosphere. In HiWATER, the CE318-NE was used.

2、Keywords

Theme：Water vapor,Aerosol,Remote Sensing Technology,Aerosol optical depth/Thickness,Solar spectrophotometer,Atmospheric Water Vapor  
Discipline：Atmosphere,Remote Sensing Technology  
Places：Heihe River Basin, the artificial oasis experimental area in the middle reaches, A’rou Superstation, Daman Superstation, Hulugou Catchment, Gaoya Hydrological Station  
Time：2012-06-01 to 2012-09-20, 2012

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：500.0MB

4.Data format：文本, \*.K7, \*.sun, \*.txt后缀

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：39.13533 | - |
| west：99.885694 | - | east：100.4578 |
| - | south：38.05497 | - |

5、Time frame:2012-06-11 22:50:00+00:00--2012-09-30 22:50:00+00:00

6、Reference method

References to data:

MA Mingguo. HiWATER: Dataset of sun photometer observations in the middle and upper reaches of the Heihe River Basin (2012). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.022.2013.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.  
  
Che, T., Li, X., Liu, S., Li, H., Xu, Z., Tan, J., Zhang, Y., Ren, Z., Xiao, L., Deng, J., Jin, R., Ma, M., Wang, J., & Yang, X. (2019). Integrated hydrometeorological, snow and frozen-ground observations in the alpine region of the Heihe River Basin, China. Earth System Science Data, 11, 1483-1499

7、Supporting project information

Heihe Watershed Allied Telemetry Experimental Research (HiWATER)

8、Data resource provider

name: MA Mingguo  
unit: Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences  
email: mmg@lzb.ac.cn