A Big Earth Data Platform for Three Poles

**HiWATER: WATERNET observation dataset in the middle of Heihe River Basin (2013)**

1、Description

This data set includes the 2013 observation data of 10 water net nodes in the 5.5km × 5.5km observation matrix (red box in the thumbnail) of Yingke / Daman irrigation area in the middle reaches of Heihe River. The 10 water net nodes contain 4cm and 10cm two-layer hydro probe II probes to observe the main variables such as soil moisture, soil temperature, conductivity and complex permittivity; the si-111 infrared temperature probe is set up at 4m height to observe the surface infrared radiation temperature of the underlying surface. The time and frequency of conventional observation is 10 minutes. In order to ensure the accurate synchronization of si-111 and remote sensing, one minute intensive observation is conducted at 00:00-04:30, 08:00-18:00 and 21:00-24:00 every day. This data set can provide spatiotemporal continuous observation data set for remote sensing estimation of key water and heat variables of heterogeneous surface, remote sensing authenticity test, ecological hydrology research, irrigation optimization management and other research.   
For details, please refer to "2013 middle reaches of Heihe River waternet data document 20141231. Docx"

2、Keywords

Theme：Soil,Surface radiation temperature,Soil salinity,Earth SurFace Processes,Soil temperature,Soil moisture/Water content  
Discipline：Terrestrial Surface  
Places：Heihe River Basin, the artificial oasis experimental area in the middle reaches, flux observation matrix  
Time：2013

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：1003.0MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.9055 | - |
| west：100.3215 | - | east：100.4097 |
| - | south：38.8369 | - |

5、Time frame:2013-01-15 00:00:00+00:00--2013-12-05 16:00:00+00:00

6、Reference method

References to data:

MA Mingguo, LI Xin, KANG Jian. HiWATER: WATERNET observation dataset in the middle of Heihe River Basin (2013). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.222.2015.db2017

References to articles:

Jin, R., Li, X., Yan, B.P., Li, X.H., Luo, W.M., Ma, M.G., Guo, J.W., Kang, J., Zhu, Z.L. (2014). A Nested Eco-hydrological Wireless Sensor Network for Capturing Surface Heterogeneity in the Middle-reach of Heihe River Basin, China. IEEE Geoscience and Remote Sensing Letters, 11(11), 2015-2019, DOI:10.1109/LGRS.2014.2319085  
  
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)  
National High-tech R&D Program of China (863 Program)  
National Development and Reform Commission Project

8、Data resource provider

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