A Big Earth Data Platform for Three Poles

**HiWATER: BNUNET soil moisture and LST observation dataset in the midstream of the Heihe River Basin (2012)**

1、Description

This dataset includes soil moisture and soil temperature observations of 75 BNUNET nodes during the period from May to September 2012 (UTC+8), which is one type of WSN nodes in the Heihe eco-hydrological wireless sensor network (WSN). The BNUNET located in the observation matrix of the HiWATER artificial oasis eco-hydrology experimental area. Each BNUNET node observes the soil temperature at 4 cm, 10 cm and 20 cm depth, and soil moisture at 4 cm depth with 10 minutes interval. This dataset can be used in the estimation of surface hydrothermal variables and their validation, eco-hydrological research, irrigation management and so on.
The detail description please refers to "Data introduction.docx".

2、Keywords

Theme：Soil,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：2012-05-12 to 2012-09-16, 2012

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：156.0MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.89629 | - |
| west：100.333928 | - | east：100.398095 |
| - | south：38.849118 | - |

5、Time frame:2012-06-03 01:14:00+00:00--2012-10-08 01:14:00+00:00

6、Reference method

References to data:

MA Mingguo, Liu Jun. HiWATER: BNUNET soil moisture and LST observation dataset in the midstream of the Heihe River Basin (2012). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.119.2013.db2016

References to articles:

Kang, J.; Li, X.; Jin, R., et al. Hybrid optimal design of the eco-hydrological wireless sensor network in the middle reach of the Heihe River Basin, China. Sensors, 2014, 14(10): 19095-19114.

Rui Jin, Xin Li, Baoping Yan, Xiuhong Li, Wanmin Luo, Minguo Ma, Jianwen Guo, Jian Kang, Zhongli Zhu. 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), 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.

Rui Jin, Xin Li, Baoping Yan, Xiuhong Li, Wanmin Luo, Minguo Ma, Jianwen Guo, Jian Kang, Zhongli Zhu. 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

7、Supporting project information

Heihe Watershed Allied Telemetry Experimental Research (HiWATER)

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