A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of investigation on channel flow and socio-economy in the midstream of the Heihe River Basin**

1、Description

The dataset includes two parts that are: 1) channel flow, crop pattern, field management, and socio-economy data measured at super-station in 2008, 2010, 2011, 2012 (UTC+8), respectively. 2) irrigation data, crop pattern, and socio-economy data investigated at Daman irrigation district and Yingke irrigation district, respectively.

1.1 Objective of investigation
Objectives of investigation for two parts data are to obtain crop pattern and irrigation water volume change with time, and to supply parameter for irrigation water optimal allocation model.

1.2 Investigation spots and items
Investigation spots include six water management stations that are Dangzhai, Hua’er, Daman, Xiaoman, Jiantan, and Ershilidun, respectively, at Daman irrigation district. Investigation items comprise water allocation time, branch channel inflow, Dou channel inflow, irrigation area, channel water use efficiency, water price, and water fee. Investigation time is described as followed:

 2012.03.16 to 2012.04.04, Spring irrigation;
 2012.04.04 to 2012.05.14, Summer irrigation;
 2012.05.20 to 2012.06.24, Summer irrigation;
 2012.05.16 to 2012.07.06, Summer irrigation;
 2012.07.15 to 2012.08.02, Autumn irrigation;
 2012.08.10 to 2012.08.26, Autumn irrigation.

Investigation spots include eight water management station that are Chang’an, Shangqin, Dangzhai, Liangjiadun, Shimiao, Xiaoman, Xindun, and Yangou, respectively, at Yingke irrigation district. Investigation time and items is described as followed:

Year Data items Spots
2008, 2010, 2011 Irrigation data: Irrigation time, water level of Dou channel, channel flow, irrigation area Xiaoman county, Shangtouzha village
2012 Irrigation data: Irrigation time, water level of Dou channel, channel flow, irrigation area Chang’an, Shangqin, Dangzhai, Liangjiadun, Shimiao, Xiaoman, Xindun, Yangou
2012 Well data: Well deep, groundwater abstraction, irrigation area Chang’an, Liangjiadun, Shangqin
2012 Socio-economy data: population, agricultural income, un-agricultural income, water use for living, average residential area, education Chang’an, Xiaoman, Liangjiadun, Shangqin
2012 Field management: fertilizer name, fertilization time, fertilization rate, pesticide name, pesticide rate, time Chang’an, Xiaoman, Liangjiadun, Shangqin
2008, 2010, 2011, 2012 Crop pattern: crop name, seed time, harvest time, crop area, irrigation quota, field water use efficiency, crop yield, crop production value Xiaoman, Chang’an, Liangjiadun, Shangqin

1.3 Data collection
Data was collected by cooperating with water management department of Yingke and Daman.

2、Keywords

Theme：Surface Water,Social and Economic,Discharge/Flow,Per capita net income of rural residents,Irrigation
Discipline：Terrestrial Surface,Human-nature Relationship
Places：Heihe River Basin, the artificial oasis experimental area in the middle reaches, Daman irrigation district, Yingke irrigation district
Time：2010, 2012-06-18, 2011, 2012-07-16, 2012, 2012-05-22, 2012-08-08, 2008

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：0.54MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.89026 | - |
| west：100.335437 | - | east：100.39606 |
| - | south：38.84863 | - |

5、Time frame:2008-01-16 18:12:00+00:00--2012-08-22 18:12:00+00:00

6、Reference method

References to data:

LI Xin, Xu Fengying. HiWATER: Dataset of investigation on channel flow and socio-economy in the midstream of the Heihe River Basin. A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.125.2013.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

The CAS (Chinese Academy of Sciences) Action Plan for West Development Project

8、Data resource provider

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