A Big Earth Data Platform for Three Poles

**Monthly groundwater table depth, soil moisture, evapotranspiration dataset with high spatial resolution over the Heihe River Basin (1981-2013)**

1、Description

This set of data is the simulation result of the newly developed land eco-hydrological model CLM\_LTF.This model is on top of the land-surface process model CLM4.5 developed by NCAR, coupling the groundwater lateral flow module and considering the role of human irrigation.  
The model runs from 1981 to 2013, with a spatial resolution of 30 arc seconds (0.0083 degrees), a time step of 1,800 seconds, and a simulation range of the heihe river basin.Air force in 1981-2012 is used by the Chinese academy of sciences institute of the qinghai-tibet plateau of qinghai-tibet plateau more layers of data assimilation and simulation center development areas of China high space-time resolution ground meteorological elements drive data set, air is forced to use 2013 national meteorological information center of wind pressure high resolution made by the wet precipitation temperature radiation data set.The land cover data is a 1km land cover grid data set for the MICLCover heihe river basin, and the irrigation data is shown in "monthly 30-arcsecond resolution surface water and groundwater irrigation data set for the heihe river basin 1981-2013" of the scientific data center for cold and dry regions.The mode output is the monthly average.  
The document is described as follows:  
Groundwater depth data: heihe\_zwt.nc  
2cm soil moisture data: heihe\_h2osoi\_2cm. nc  
100cm soil moisture data: heihe\_h2osoi\_100cm.nc  
Evaporation data: Heihe\_evaptanspiration. Nc  
The data is in netcdf format.There are three dimensions, which are month, lat, and lon.  
Where, month is a month, and the value is 0-395, representing each month from 1981 to 2013. Lat is grid latitude information, and lon is grid longitude information.  
The data is stored in the data variable. The underground water depth data is in m, the soil moisture data is in m^3/m^3, and the evapotranspiration data is in mm/month

2、Keywords

Theme：Soil,Ground Water,Soil moisture/Water content  
Discipline：Atmosphere,Terrestrial Surface  
Places：Heihe River Basin  
Time：1981-2013

3、Data details

1.Scale：850000

2.Projection：4326

3.Filesize：2878.0MB

4.Data format：netcdf

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：43.0 | - |
| west：96.5 | - | east：102.5 |
| - | south：37.5 | - |

5、Time frame:1981-01-24 03:51:00+00:00--2014-01-23 03:52:00+00:00

6、Reference method

References to data:

XIE Zhenghui. Monthly groundwater table depth, soil moisture, evapotranspiration dataset with high spatial resolution over the Heihe River Basin (1981-2013). A Big Earth Data Platform for Three Poles, doi:10.11888/Hydro.tpdc.2708882017

References to articles:

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Zeng, Yujin, Xie, Zhenghui, Yu, Yan, Liu, Shuang, Wang, Linying, Zou, Jing, Qin, Peihua, Jia, Binghao. Effects of anthropogenic water regulation and groundwater lateral flow on land processes. Journal of Advances in Modeling Earth Systems, 2016, :n/a-n/a. doi:10.1002/2016MS000646  
  
ZengY.G., Xie,Z.H., Yan,Y., Liu,S., Wang,L.Y., Zou,J. (2015) Effects of human water withdrawal and consumption on land processes under consideration of groundwater lateral flow: A case study of the Heihe River Basin, northwestern China, submitted

7、Supporting project information

8、Data resource provider

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