A Big Earth Data Platform for Three Poles

**Supply, Development and Utilization Potential Dataset of Agricultural Water Resources in Aral Sea Basin of Central Asian (V1.0, 2000-2099)**

1、Description

Asian, and is divided into 1100 sub-basins for distributed hydrological modelling. The integrated water system model (HEQM) is improved to simulate the freezing and thawing processes of snow cover and glacier in this region. The historical daily weather inputs (i.e., precipitation and temperature) with high spatial resolution (0.45 degree) are obtained using the image fusion of NECP and ECMWF based on compressed sensing in the domain of Fourier coefficients, and the long-term annual runoff observations from 1940 to 2000 at 22 stations were used to implement of HEQM calibration and validation. Furthermore, the future weather inputs are rebuilt using the median of daily climate outputs of five GCMs in the Inter-Sectoral Impact Model Intercomparison Project (ISI-MIP) and then drive the well-calibrated HEQM to project the development and utilization potentials of agricultural water resources in the future. The data sets includes three time periods of 2000s (2001-2005), 2010s (2006-2010) and 2015s (2011-2015) for the historical period, and two periods of 2040s (2041-2070) and 2070s (2071-2099) for the future period in the RCP4.5 and RCP8.5 with a spatial resolution of 0.5°\*0.5°. It is expected to provide basic data support for distributed water cycle simulation, water supply and demand, development and utilization analysis in the Central Asian.

2、Keywords

Theme：Hydrology  
Discipline：Terrestrial Surface  
Places：Pan-third pole  
Time：2000-2099

3、Data details

1.Scale：None

2.Projection：

3.Filesize：311.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：53.5 | - |
| west：59.0 | - | east：84.0 |
| - | south：34.5 | - |

5、Time frame:1999-12-31 16:00:00+00:00--2099-12-30 16:00:00+00:00

6、Reference method

References to data:

YANG Peng , ZHANG Yongyong, LIU Yu . Supply, Development and Utilization Potential Dataset of Agricultural Water Resources in Aral Sea Basin of Central Asian (V1.0, 2000-2099). A Big Earth Data Platform for Three Poles, doi:10.11888/Terre.tpdc.2721582022

References to articles:

7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program

8、Data resource provider

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