A Big Earth Data Platform for Three Poles

**Water balance dataset in the Yellow River source region and Qilian Mountains in the future 50 years (runoff, precipitation, evapotranspiration, soil liquid water content)**

1、Description

This dataset is the water balance dataset in the Yellow River source region and Qilian Mountains in the future 50 years (runoff, precipitation, evapotranspiration, soil liquid water content). It is simulated by the Geomorphology-Based Ecohydrological Model (GBEHM). The variables in the dataset include monthly runoff, monthly precipitation, monthly evapotranspiration, the monthly average 5cm soil liquid water content and the monthly average 50cm soil liquid water content. The temporal range is 2020-2070 and the spatial resolution is 1 km. The input data of the model include meteorological forcings, vegetation, soil and land use data, and the meteorological forcings are obtained from the ensemble mean of 38 CMIP6 models under SSP2-4.5 scenario. The simulation results can reflect the spatio-temporal changes of the hydrological variables in the Yellow River source region and Qilian Mountains. The dataset can be further used for researches into the eco-hydrological processes in the Yellow River source region and Qilian Mountains, and help provide a scientific basis for the optimal allocation of " mountains, rivers, forests, farmlands, lakes and grasslands " system.

2、Keywords

Theme：Surface Water,Earth SurFace Processes,Hydrology  
Discipline：Terrestrial Surface  
Places：the source region of the yellow river, Tibetan Plateau, Qilian Mountain  
Time：2020-2070

3、Data details

1.Scale：None

2.Projection：Lambert\_Azimuthal\_Equal\_Area

3.Filesize：1500.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：40.0 | - |
| west：93.0 | - | east：104.0 |
| - | south：32.0 | - |

5、Time frame:2019-12-31 16:00:00+00:00--2070-12-30 16:00:00+00:00

6、Reference method

References to data:

WANG Taihua, YANG Dawen. Water balance dataset in the Yellow River source region and Qilian Mountains in the future 50 years (runoff, precipitation, evapotranspiration, soil liquid water content). A Big Earth Data Platform for Three Poles, doi:10.11888/Terre.tpdc.2719512021

References to articles:

Zheng, G.H., Yang, Y.T., Yang, D.W., Dafflon, B., Yi, Y.H., Zhang, S.L, Chen, D.L, Gao, B., Wang, T.H, Shi, R.J., & Wu, Q.B. (2020). Remote sensing spatiotemporal patterns of frozen soil and the environmental controls over the Tibetan Plateau during 2002–2016. Remote Sensing of Environment, 247, 111927.  
  
Qin, Y., Yang, D., Gao, B., Wang, T., Chen, J., Chen, Y., & Zheng, G., et al. (2017). Impacts of climate warming on the frozen ground and eco-hydrology in the Yellow River source region, China. Science of the Total Environment, 605, 830-841.  
  
Gao, B., Yang, D., Qin, Y., Wang, Y., Li, H., Zhang, Y., & Zhang, T. (2018). Change in frozen soils and its effect on regional hydrology, upper Heihe basin, northeastern Qinghai–Tibetan Plateau. The Cryosphere, 12(2), 657-673.

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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