A Big Earth Data Platform for Three Poles

**Global Reconstruction of Naturalized River Discharge at 2.94 Million River Reaches (GRADES)**

1、Description

Natural runoff simulation data products of 2.94 million river sections in the world, unit: m3/s. This data is based on the simulation of VIC hydrological process model and RAPID vector river network concentration model. The spatial resolution of the land surface hydrological process model is 0.25 °, and the river network data in the vector concentration model is extracted based on the 90-m MERIT Hydro hydrological correction terrain data product. The runoff generation part is calibrated based on the runoff characteristic values obtained by machine learning, and the grid scale runoff generation deviation correction is carried out based on the multi quantile runoff characteristic values. The data products are verified by 14000 runoff observation stations around the world, and have better verification accuracy.

2、Keywords

Theme：Runoff,Total surface water,Runoff yield,Surface Water,River water,Hydrologic characteristic value,Discharge/Flow,Rivers/Streams,Hydrology,Hydrological models,Runoff  
Discipline：Terrestrial Surface  
Places：Global  
Time：1979-2013 Daily

3、Data details

1.Scale：None

2.Projection：

3.Filesize：144588.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：90.0 | - |
| west：-180.0 | - | east：180.0 |
| - | south：-60.0 | - |

5、Time frame:1978-12-31 16:00:00+00:00--2013-12-30 16:00:00+00:00

6、Reference method

References to data:

LIN Peirong , PAN Ming , YANG Yuan . Global Reconstruction of Naturalized River Discharge at 2.94 Million River Reaches (GRADES). A Big Earth Data Platform for Three Poles, doi:10.11888/Terre.tpdc.2728982022

References to articles:

Lin, P., Pan, M., Beck, H.E., Yang, Y., Yamazaki, D., Frasson, R., David, C.H., Durand, M., Pavelsky, T., Allen, G., Gleason, C., & Wood, E.F. (2019). Global reconstruction of naturalized river flows at 2.94 million reaches. Water Resources Research, 55 (8), 6499-6516.

7、Supporting project information

8、Data resource provider

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