A Big Earth Data Platform for Three Poles

**Dataset of Major Elements and Isotopes of Longmen and Tangnaihai Hydrological Stations in the Yellow River (2012-2014)**

1、Description

The study of chemical weathering is of great significance to understand how the plateau uplift regulates the mechanism of climate change and the circulation of elements and materials in the sphere. The data set is the seasonal major element concentration and stable isotope data of the river water at the hydrological station of the Yellow River Basin originating from the Qinghai Tibet Plateau. There are two hydrological stations in total: 1. Longmen hydrological station in the middle reaches of the Yellow River is the high-resolution (weekly) sample data collected in 2013, and the element concentrations include K, CA, Na, Mg, SO4, HCO3, Cl, etc. The cation data of collected water samples are tested on ICP-AES of Institute of earth environment, Chinese Academy of Sciences, and the anion data are tested on ion chromatograph (ics1200) of Nanjing Institute of geography and lakes, Chinese Academy of Sciences. The uncertainty is within 5%, and HCO3 is tested by titration. The high-resolution (weekly) Li isotope data of river water was tested in MC-ICP-MS of Institute of earth environment, Chinese Academy of Sciences in 2017, and the test accuracy 2sd is better than 5 ‰; 2. Tangnaihai hydrological station on the Yellow River is the river water (month by month) data set collected from July 2012 to June 2014. The major element concentrations include K, CA, Na, Mg, SO4, HCO3, Cl, etc., and the stable isotope data include s, O and H. The data set can be used to study the modern weathering process under the background of the uplift of the Qinghai Tibet Plateau, and provides the first-hand reliable data for the study of physical erosion and chemical weathering in the basin.

2、Keywords

Theme：Cations and anions,Water chemistry,Runoff,Major elements,Surface Water,Stable hydrogen and oxygen isotope,Stable isotopes,Modern river,Geochemistry,alkalinity,Hydrology,Environmental geochemistry,Water Quality/Water Chemistry  
Discipline：Terrestrial Surface,Solid earth  
Places：Tangnaihai, Huanghe, Longmen station  
Time：2013, weekly, 2012, 2014

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.037MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.0 | - |
| west：96.0 | - | east：119.0 |
| - | south：32.0 | - |

5、Time frame:2012-06-30 16:00:00+00:00--2014-06-30 03:59:59+00:00

6、Reference method

References to data:

JIN Zhangdong, ZHAO Zhiqi. Dataset of Major Elements and Isotopes of Longmen and Tangnaihai Hydrological Stations in the Yellow River (2012-2014). A Big Earth Data Platform for Three Poles, doi:10.11888/Hydro.tpdc.2716192021

References to articles:

Zhang, Q., Jin, Z., Zhang, F., & Xiao, J. (2015). Seasonal variation  
in river water chemistry of the middle reaches of the Yellow  
River and its controlling factors. J. Geochem. Explor. 156, 101–113  
  
Gou, L.-F., Jin, Z., Pogge von Strandmann, P.A.E., Li, G., Qu, Y.-X., Xiao, J., Deng, L., Galy, A. (2019). Li isotopes in the middle Yellow River: seasonal variability, sources and fractionation. Geochim. Cosmochim. Acta248, 88–108.

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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