A Big Earth Data Platform for Three Poles

**Data set of flow-sediment processes in the Yarlung Zangbo River (2021)**

1、Description

To further investigate the transport process and temporal-spatial evolution of solid material in the Yarlung Zangbo River basin, the Sitting Bottom Bionic Water and sediment Observation System, which is the first set of good at the strong hydrodynamic condition and can continuously measure flow-sediment processes in real-time, was installed at Yangcun hydrology station by the sedimentary Dynamics observation team of Sichuan University on May 15, 2021. The bionic system was equipped with different types of observation equipment for water and sediment characteristics, which can measure the critical characteristics of water and sediment motion with high time resolution for a long time, continuously and synchronously. This data set contains the continuous data of 1) vertical velocity distribution (ADCP20210515.xlsx), 2) instantaneous velocity and turbulence of a single point near-bed, 3) Suspended sediment concentration measured by super turbidimeter (AOBS20210515.xlsx), 4) water depth, suspended sediment concentration and size distribution measured by Laser granulometer (Lisst20210515.xlsx). The data set with nearly a month recorded synchronous and continuous observation data of water and sediment characters with high temporal resolution per 10 minutes, which successfully observed the coupling change process of water and sediment under the increasing discharge of Yarlung Zangbo River. The simultaneous and continuous observation technology of water and sediment based on the bionic observation system provides technical support and scientific basis for revealing the source to sink process and evolution of Yarlung Zangbo River, bedload transport, flood numerical simulation, flash flood disaster warning and prevention, and major infrastructure construction.

2、Keywords

Theme：Surface Water,Water flow rate,Water depth,Sediment  
Discipline：Terrestrial Surface  
Places：Yarlung Tsangpo River, Yangcun hydrology station  
Time：2021

3、Data details

1.Scale：None

2.Projection：

3.Filesize：11.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：31.0 | - |
| west：82.0 | - | east：85.0 |
| - | south：29.0 | - |

5、Time frame:2021-05-15 00:00:00+00:00--2022-06-11 12:10:00+00:00

6、Reference method

References to data:

WANG Xiekang, LUO Ming, MA Xudong, LIU Chao, XU Weilin, WANG Lu, HUANG Er, YAN Xufeng. Data set of flow-sediment processes in the Yarlung Zangbo River (2021). A Big Earth Data Platform for Three Poles, doi:10.11888/Terre.tpdc.2725122022

References to articles:

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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