A Big Earth Data Platform for Three Poles

**Siphon drainage tests with variable diameters (2020)**

1、Description

Landslide drainage and seepage prevention is a common technology for the treatment of landslide source area in Qinghai Tibet Plateau. The existing siphon drainage technology is inefficient when applied to high altitude areas. Through improvement, a variable pipe diameter and high head siphon drainage technology is proposed to solve the deep drainage problem of landslide in high altitude and low pressure areas. 12 groups of siphon drainage tests with variable pipe diameter were carried out to verify the correctness of the theoretical velocity calculation formula. The test results show that the theoretical calculation results of siphon velocity are in good agreement with the test results, and the relative error of theoretical calculation is within 5%; Different schemes of variable pipe diameter increase the siphon flow rate by 15% - 116%. It can be seen that variable pipe diameter can significantly enhance the drainage capacity of siphons, especially for high lift siphons.

2、Keywords

Theme：landslide,Natural Disaster,Groundwater (Phreatic water ),Water Resources  
Discipline：Human-nature Relationship  
Places：hangzhou  
Time：2020

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.03MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：90.0 | - |
| west：0.0 | - | east：0.0 |
| - | south：-90.0 | - |

5、Time frame:2020-06-30 16:00:00+00:00--2020-12-31 03:59:59+00:00

6、Reference method

References to data:

ZHENG Jun . Siphon drainage tests with variable diameters (2020). A Big Earth Data Platform for Three Poles, doi:10.11888/HumanNat.tpdc.2721022022

References to articles:

Zheng, J., Wang, J., Guo, J., Zhang, Y., Lü, Q., & Sun, H\*. (2021). A siphon drainage system with variable diameters for landslides: concept, calculation, and validation. Journal of Hydrology, 597, 126305.

7、Supporting project information

Catastrophic mechanisms and risk control of disastrous landslides in the Tibetan Plateau

8、Data resource provider

name: ZHENG Jun   
unit: Zhejiang University  
email: zhengjun12@zju.edu.cn