A Big Earth Data Platform for Three Poles

**Test data and image data of channel source erosion initiation based on indoor model test**

1、Description

Aiming at the material source of "wide, gentle" and "narrow and steep" debris flow gully, based on field investigation and indoor rock and soil mechanical parameter test, this study uses indoor model experiment to study the starting mechanism of loose material in gully under different influencing factors. Through data analysis and fitting, the dynamic reserve model of gully provenance is established, which provides reference and scientific basis for the prediction, early warning and treatment engineering design of similar debris flow gully in earthquake area. The main conclusions are as follows:  
(1) The incipient erosion processes of deposits with different structural types are different: fine-grained soil appears rills at the front edge after the start of runoff at the rear, and gradually develops into pull grooves, which run through to the rear edge; After the runoff of coarse-grained soil starts, the front edge collapses and slides, showing the characteristics of traceability erosion; The upper fine and lower coarse soil first formed grooves at the boundary of soil layer and gradually extended to the rear edge; The upper coarse and lower fine soil first form a rill at the front edge, and the coarse soil in the back layer slides and scrapes the fine soil at the front edge.  
(2) At the moment of debris flow starting, coarse particles are mainly started in the form of sliding, jumping and rolling, and the starting and migration forms of coarse particles in fine-grained soil are mainly rolling and jumping; In coarse-grained soil, the coarse particles are mainly started by sliding; The confluence of upper fine and lower coarse soil is dominated by rolling and jumping in the early stage, and sliding in the later stage; The coarse particles in the upper coarse and lower fine soil start mainly by sliding.  
(3) The greater the rainfall intensity, the greater the runoff, and the stronger the undercutting erosion. The erosion curve tends to increase first and then decrease, and the maximum erosion depth generally appears at the place where the slope changes steeply and gently.  
(4) Based on the indoor simulation test results and fractal dimension theory, the evaluation model of "wide and slow" channel source dynamic reserves is established and verified.

2、Keywords

Theme：Engineering Geology,Geologic Hazard  
Discipline：Solid earth  
Places：Indoor model testing  
Time：None

3、Data details

1.Scale：None

2.Projection：

3.Filesize：10.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：31.54 | - |
| west：104.68 | - | east：104.7 |
| - | south：31.53 | - |

5、Time frame:2019-08-31 16:00:00+00:00--2020-02-28 16:00:00+00:00

6、Reference method

References to data:

ZHANG Youyi . Test data and image data of channel source erosion initiation based on indoor model test. A Big Earth Data Platform for Three Poles, doi:10.11888/SolidEar.tpdc.2721282022

References to articles:

7、Supporting project information

Initiation pattern and evaluation method for dynamic reserves of differently originated source materials of channelized debris flows in strong earthquake area

8、Data resource provider

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