

Interactive comment on “Movement of the Donglingxin landslide, China, induced by reservoir inundation and rainfall” by J. Yu et al.

J. Yu et al.

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Dear Referee

Thank you very much for your constructive comments and valuable recommendations. My responses to several comments are listed below:

P2537, line 14: I have corrected geomorphological conditions instead of geomorphological condition. P2538, lines 16-20: I have rewritten this section. Lines 25: I have added more references and information from other previous studies. P2539, lines 1: I have added space between the reference and the next sentence. Line 3: I have corrected project instead of probject. Line 7: “normal pool level 475 m” means the reservoir’s normal water level is 475 m. Line 11: the number of houses is about 20.

C841

Line 14: I have corrected supports and protections measures by support and protection measurements. Line 15: 32550 inhabitants are going to be affected. Line 18-20: I have rephrased and completed this section. Line 23: I have added “the” before landslide. P2540, lines 7-8: I have rewritten locating the different thickness of the landslide. Lines 10-11: Climate affects the landslide by rainfall, and human activities also affect landslide, so I describe these in the section. P2541: I have changed “layer landslide” into “landslide layer” in the whole section. Line 17: I have corrected the verb. P2542: I have changed the heading into: “Deformation features, mitigation and monitoring systems”. Line 7: I have rewritten the sentence. Lines 9-10: the present situation was described in next sentence. Line 21: The deep of the deep surface is about 50~70 m. there is one internal slide in the translational slide. I have explained this part more detailedly. P2543, lines 4-5: I have rephrased into “.. some support and protection measures are difficult to establish. According to Fleming et al. (1989) and Iverson et al. (1997), the increase of water pressure induces the decrease of shear strength so that a drainage is the only mitigation system which can be adopted.” Line 13: I have changed Fig into Figure. Line 21: The groundbased measurement system consists of level, electronic total station and datum points. P2544: the 5.1. I have added rainfalls into heading. Lines 3-4: I have rewritten this sentence. Lines 13-14: In this period, groundwater is mainly affected by reservoir fluctuation, the effect of rainfall can be ignored which compared with the effect of reservoir fluctuation. Lines 19-22: I have rewritten this sentence. Line 23-24: I have added information in this sentence. Line 25: It’s multimeter. P2545, line 5: I have corrected “reached” instead of “fell”. Line 14: I have modified “2 years” instead of “2 year”. Lines 16-17: I have rephrased this sentence. Line 20: I have added “the” before reservoir, and I have replaced “biggest” by “largest”. P2546, line 13-14: I have simplified the sentence. Lines 17-18: I have improved the sentence. Line 19-22: I have rephrased the sentence. Lines 22-13: Human activity and intense rainfall accelerated the deformation rate. P2547, line 3: I have rephrased into “the increase of the pore water pressure and the shear strength of the sliding zone characterized by the cohesion c and the friction angle φ (see Tab. 1; HydroChina Zhongnan

C842

Engineering source). Line 7: It should be profiles, I have corrected it. Line 8: I have added a reference after mentioning the Janbu method. Lines 11-12: I have rephrased this section. Line 13: I have modified into "whereas the inundation has the opposite effect". Line 16-17: I have rewritten this section. P2548, line 2-3: I have rephrased using "recorded" and some punctuation. Line 4: I have modified into "old large-scale landslide". Lines 6-8: I have rewritten this section. Lines 9: I have modified into "landslide layer", "stones and gravels". Line 10: I have corrected "high permeability" instead of "good permeability". Line 11: The water types induce strength reduction of the rock materials. Line 13: I have modified the sentence into "Considering the presence of a narrow valley at the landslide toe, the support and protection measurements are difficult to settle down. The deformation process near the drainage tunnel may be more important after a few months of drainage." Lines 16-17: I have rephrased "to water level changes in the..." into "to some changes into the water level of the...". Lines 22-23: I have rewritten this section. Line 24: I have replaced "great" by "high". P2549, lines 1-2: I have rephrased into "while the inundation has the opposite effect with a high influence on the stability of the deep sliding surfaces". Lines 3-4: I have rephrased this sentence.

Fig. 1: I have added a zoom of the area in a map covering the whole country. Fig. 2: I have removed the figure by a proper morphological map of the sliding area with scale bar, legend, north. Fig. 3: I have added north and approximate scale bar on the picture. Fig. 4: I have modified the figure to make it clearer by removing some contour lines and change into dotted lines, And I have rephrased the figure caption into: "Topography of the Donglingxin landslide and location of the monitoring points." Fig 5 I have modified the figure to make it can be readable. Fig. 6: The pictures to the right are zoom of the one to the left. I have modified the figure caption. Fig. 7: I have added North, a. and b in the picture. The b is not a zoom of the a. Fig 8: I have modified the figure to make it clearer by removing some contour lines and change into dotted lines. Fig 9: I have added space between the pictures. Fig. 10 and Fig 11: Fig 10 shows the water level fluctuation, Fig 11 shows the displacements of landslide their scale is different, and too many curves in the figure may be not readable. Fig. 12: I have add orientation, scale.

C843

Indicating the location of geomorphological features and building areas.

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