

Interactive comment on “Comprehensive evaluation of high rocky slope safety through an integrated analytic hierarchy process and extension matter model” by H. Z. Su et al.

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The paper proposes a approach implementing the safety evaluation for high rocky slope. Many factors influencing rocky slope safety are considered by building a multilevel and multi-index evaluation system. Some methods are integrated to fulfill the comprehensive evaluation of high rocky slope safety. The topic is overall within the major scopes of NHESS and may be of some interests to its general readers and, in particular, those specialized in civil engineering. The manuscript can be considered for publication with minor revisions. Response: Thank you very much for your evaluation and approval for our manuscript. We would like to express our great appreciation to you. We have tried our best to improve the manuscript.

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1. To make the original contribution be clear, it might be more suitable that the title of the manuscript is changed into “An approach using multi-factor combination to evaluate high rocky slope safety”. Response: According to your suggestion, the title of the manuscript has been changed into “An approach using multi-factor combination to evaluate high rocky slope safety”.

2. In Figure 1, the meaning of unique dotted arrow should be explained. Response: Thank you very much for pointing it out. We have carefully explained the unique dotted arrow in Figure 1. There are lots of factors related to the rocky slope safety. Some of these factors are still unknown and a few factors are neglected for their ignorable influences to the rocky slope safety. Therefore, the dotted arrows are added to denote the unknown and ignorable factors for a more complete rocky slope safety evaluation process in Figure 1.

3. In Section "Case study", more details might be added to better embody the present safety state of the high rocky slope. Response: We are so sorry that we didn't express clearly in the original manuscript. According to your suggestion, more details have been added to better embody the present safety state of the high rocky slope in the Section "Case study" in Revised manuscript. The height of the unique high rocky slope is more than 700m and the wide is 50m~290m for an area of 115, 000m². Larger deformations of the surface and inner rocks are caused for not good geological conditions under complex internal and external environments, such as rainfall, groundwater, and so on. The larger cumulative deformation velocity could reach to 3.5mm/d. At present, the maximum cumulative displacement amount is about 1500mm for one year. Therefore, the present rocky slope is unstable and its safety needs to be analyzed urgently by integrating multiple methods.

4. The authors should check the final manuscript and avoid any grammatical error or syntax error. Response: The authors have checked the final manuscript carefully for many times for voiding any grammatical error or syntax error. In addition, we have asked several colleagues who are skilled authors of English language papers to check

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the paper.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2015-336/nhess-2015-336-AC1-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2015-336, 2016.

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