Interactive comment on "Dangerous degree forecast of soil and water loss on highway slopes in mountainous areas using RUSLE model" *by* Yue Li et al.

Anonymous Referee #2

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Highway is booming in China in recent twenty years. Hence how to control soil erosion from the subgrade slope is an important issue of the road safety. From this point, the topic is valuable. The manuscript is also readable although still many language errors exist. Nevertheless, the structure of the paper is poor. Instead of a research paper, the manuscript looks like a scientific report. Too many original data are shown in the manuscript but short of in-depth discussions. I strongly suggest the authors rewrite the manuscript. Some of errors or problems are shown as follows. (1) Abstract. ïČŸ Lines 29-30: The word "show" should be replaced with the word "shows". There are many grammar errors throughout the manuscript. I think the paper may be polished by a soil scientist whose native language is English. ïČŸ Lines 28-30: Is the error of

the erosion rate per year? I think the unit may be t.km-2. a-1. So are the units of the erosion rates appear through the manuscript. ïČŸ Lines 30-31: The unit of the root mean square error of the soil loss is same to the unit of soil loss. Here the unit is t.km-2. a-1. ïČŸ Lines 33-37: You said "the percentage of prediction units with no risk of erosion is 78% and that with mild soil erosion risk is 15.92%". Do you mean the high and extremely high risk is 1-78%-15.92%=6%? If my deduction is right, I think no large difference exists between this risk and that described in line 37, 7.11%. (2) Introduction ïČŸ Lines 60-61: "In the next 20–30 years, expressways in China will measure more than 40 thousand km". However I find in the network that "since 2016, the total length of the highway in China is about 131 thousand km". I do not know which length is correct? ïČŸ Line 131: "...the main type of soil erosion in the study area was gully erosion". Could USLE or RUSLE be applied in the gully erosion? Other minor errors are shown as follows: ïČŸ Lines 62-63: I am lost! Might you kindly let me you the area attacked by soil erosion in this sentence? ïČŸ Line 68: The word "affect" should be "affects" or "influences". ïČŸ Line 78: What's the meaning of the following sentence: "...have explored the process of using the RUSLE model"? ïČŸ Lines 81-82: I am lost. ïČŸ Line 85: 20%-90% should be revised as follows: 20-90%. ïČŸ Lines 125-126: I can not understand. ïČŸ Line 141: "According to studies at home and abroad". Please remember you are writing a paper for the international journal instead of a scientific report in Chinese! ïČŸ Line 158: "In this study, " may be added in front of the sentence "A suitable..." ïČŸ Lines 161-162: I am lost. (3) Study area ïČŸ Line 193: Figure 1 may be merged to Figure 4 in page 11. (4) Materials and method ïČŸ All of the subtitle of the part, including 3.1, 3.1.1-3.3.4, and 3.2, may be erased. Attention please, some of the subtitles in the manuscript are wrong. (5) Results and analysis ïČŸ From page 9 to page 22: The part looks like a scientific report instead of a research paper. Except the original experimental data, hardly any in-depth discussion exists. ïČŸ Page 23: The calculated results have not been compared with the results described in other references. Also I do not know why the errors emerge.

Some of other problems are shown as follows: ïČŸ Where is the line number? ïČŸ

Segment 4.1: The segment is a method, and it may be simplified and removed to Part 3 Materials and method. ïČŸ Segment 4.2.5 in page 21: Why were the landform factors calculated according to the natural slopes (4.2.3) and the artificial slope (4.2.4), but was the vegetation cover calculated only in one situation (4.2.5)? ïČŸ Line 4 of page 28: "A cement box should be added in the soil a year": Is this the only conservation practice we should adopt? References ïČŸ Page 29: "Liu, X. Y.: Study on the slope stability and its rheological influence in Mountain highway. Central South University, 2013": Is it a paper in Chinese journal or international journal, or an academic dissertation in Chinese? ïČŸ Page 30: "Bosco, C., De Rigo, D., Dewitte, O., Poesen, J., and . . ." should be removed forward as the second reference. ïČŸ Page 30: "Wang, H. J., Yang, Y., andWang, W. J.: Prediction of Soil Loss Quantity. . .": Is it a paper in Chinese journal?

Please also note the supplement to this comment:
https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2017-406/nhess-2017-406-RC2-supplement.pdf

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Discussion paper