

Response to Reviewer 1 Comments

Thank you for your comments and suggestions on our manuscript entitled “A simplified calculation method of seepage flux for slope-wall rock-fill dams with horizontal blanket” (ID: applsci-806596). Those comments are all valuable and very helpful for revising and improving our paper, as well as the important guiding significance to our researches. We have studied comments carefully and have made correction which we hope meet with approval. Revisions are marked in red by the “revisions mode” in the manuscript. The main corrections in the paper and the responds to the reviewer’s comments are as flowing:

Point 1: First of all, the manuscript needs language proofing, and I believe some technical terms are misused (especially disturbing is the use of a term check dam). In the manuscript you can find yellow highlights.

Response 1:

Thank you for your comments. English expression has been carefully improved throughout the manuscript, especially the yellow highlights. And the revision are marked in red by the “revisions mode” in the manuscript. Also, the term “check dam” is changed by “embankment dam” in this article.

Besides, the term “check flood level” refers to that the dam is usually designed according to the design flood level and checked with higher level flood standard, which is check flood level. This definition can be found in *Standard for rank classification and flood protection criteria of water and hydropower projects* (SL252-2017)

Point 2: I am curios how did you estimate the phreatic lines and water levels in the dams you are presenting as examples, with measurements? Please mention this in the manuscript.

Response 2:

The data of water levels is provided by the Design Institute, and engineering design reports are confidential so that I can’t show them in the Internet. Therefore I cited some articles on the same project for reference, and the water levels are also mentioned in their studies.

Point 3: Furthermore, is the amount of the percolating and seepage water measured on these dams?

Response 3:

I'm sorry that I didn't mention it in my previous manuscript that the two engineering is still under construction, so there is no seepage measurement data on these dams.

Usually in the initial stages of dam designing, leakage will be estimated through numerical method, while the numerical method is much more complicated than analytical method.

Hence the method in this article is proposed to be applied in the initial stages of dam designing, such as demonstrate the performance of seepage prevention measures or evaluate the dam safety in the feasibility research of dams.

Furthermore, in order to increase the reliability of the proposed method, other analytical methods proposed by some scholars are added in this paper, and comparisons and discussions are made as well.