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January 18, 2019

Subject: Manuscript revision

Dear Editor and Referees,

We are heartily grateful to your valuable suggestions.

We are submitting our revised version entitled "Application of the LM-BP neural network approach for landslide risk assessments", Manuscript ID nhess-2018-360.

Please find the revised manuscript with track changes. In order to facilitate your review, bold fonts were used to show revision and changes. In the following "Point-to-point response to the editor's letter and the reviewers' comments".

Please do not hesitate to contact me, if further material or information is needed.

Note: All major changes are red-marked in the revised manuscript.

Thanks again.

Sincerely yours,

Junnan Xiong

Detailed responses to the comments are addressed below.

Reviewers' Comments to Author:

The author had carefully revised the article according to the comments. Acceptance is suggested. Meanwhile, there are still two minor suggestions just for the author's reference.

1. The practical application value and method of this research in engineering geological projects should be better clarified.

Thank you for your comments. Relevant descriptions have been add.

Line 332-339:

The main purpose of this study was to provide managers and planners with a comprehensive assessment of landslide risk in pipeline area. The results offer information on the possibility of failure of slopes or even pipelines in an area in the future, rather than the area that may be damaged by landslides. The landslide susceptibility maps could help planners reorganize and plan future pipeline construction. Pipeline vulnerability maps could assist engineers for pipeline maintenance operation. Based on this final risk map, managers and engineers can then make decisions and formulate prescriptions that will have highly predictable results for safely transporting medium, settlement relocation, and significantly reducing risk of any adverse effects.

2. The future research directions should be indicated.

We thank you for your comments, and we have supplemented relevant descriptions.

Line 340-345

Future research could explore detailed comparison of different methods, and finalize an optimal method. Moreover, it is possible that the information needed for the landslide risk assessments can be obtained by simple and effective ways, if plan to build database. Meanwhile, the landslide risk assessment model can be designed as dynamic systems, as the developments in computer and GIS technologies. The system predicts possible future landslides or pipeline damaged by inputting the information obtained in the database, and various adjustment factors.