Nat. Hazards Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/nhess-2020-127-AC2, 2020

Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Exploring the potential relationship between the occurrence of landslides and debris flows: A new approach" *by* Zhu Liang et al.

Zhu Liang et al.

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Received and published: 22 May 2020

Dear review First of all, thank you for your valuable time in reviewing this paper. And I am now I will reply to your comments one by one. 1.Random forest is a popular and efficient algorithm among many ensemble learning machines. Other ensemble machines, such as GBDT, AdaBoost-decsion Tree, etc., have also been apply to landslide susceptibility prediction. There are three basic ways of machine integration, Boostting, Bagging and Stacking. In addition, some deep learning machines, such as ANN and SVM, are also common in landslide sensitivity prediction. Of course, traditional modeling methods, such as logistic regression and bayes, have also achieved good

performance. The evaluation of a model is inseparable from several points: accuracy, robustness and analytical. Scholars have published a lot of papers on the comparison and application of evaluation methods in landslide susceptibility prediction, so the focus of this paper is not on the applicability of evaluation methods. But the application of random forest have achieve great performance, which guarantees the following research.The new approach referred to in the title of this article is not random forest, which may be a misunderstanding. 2.I have made relevant explanations of the point that different type of landslides has different mechanishm of occurrences. But, actually, there is some papers that do not differentiate between different types of landslides. I agree with your comment, so I selected different influencing factors for different types of landslides. 3. As you said, different type of landslides.Many studies show that landslides can be the source of debris flow. 4.We am sorry for the mistakes and please point them out. 5.It can be given at anytime if you need. Thank you again for the corrections you made. Best wish, Liang Relevant references: Guzzetti, F., Carrara, A., Cardinali, M., Reichenbach, P., 1999. Landslide hazard evaluation: a review of current techniques and their application in a multi-scale study, Central Italy. Geomorphology 31, 181–216. Guzzetti. F, M. Galli, P. Reichenbach, et al. Landslide hazard assessment in the Collazzone area, Umbria, Central Italy. 2006, 6(1):115. Guzzetti, F., Galli, M., Reichenbach, P., Ardizzone, F., Cardinali, M., 2006a. Landslide hazard assessment in the Collazzone area, Umbria, central Italy. Nat. Hazard. Earth Syst. Sci. 6, 115–131. Guzzetti, F., Reichenbach, P., Ardizzone, F., Cardinali, M., Galli, M., 2006b. Estimating the quality of landslide susceptibility models. Geomorphology 81, 166–184. Alessandro Trigila, Carla Iadanza, Carlo Esposito, et al. Comparison of Logistic Regression and Random Forests techniques for shallow landslide susceptibility assessment in Giampilieri (NE Sicily, Italy). 2015, 249:119-136. Ahmed Mohamed Youssef, Hamid Reza Pourghasemi, Zohre Sadat Pourtaghi, et al. Erratum to: Landslide susceptibility mapping using random forest, boosted regression tree, classification and regression tree, and general linear models and comparison of their performance at Wadi Tayyah Basin, Asir Region, Saudi Arabia. 2016, 13(5):1315-1318. Blais-Stevens A, Behnia

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