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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Landslide risk zoning in Ruijin, Jiangxi, China" *by* Xiaoting Zhou et al.

Anonymous Referee #3

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The manuscript under review presents a well-structured and clearly readable application of a machine learning (Random Forest)-approach to spatially predict landslide occurence. The illustrations are instructive and well-elaborated.

However, title and scope of the paper are completely misleading. The study just resembles a classification of terrain units (30 m X 30 m pixels) for the probability of landslide occurrence based on several geo-environmental factors and does not consider the temporal probability of such events to occur in the context of a hazard assessment, possibly serving as a basis for landslide risk zonations. The presented analyses have nothing to do with any kind of a risk analysis since no (spatial) vulnerability assessments of potential objects at risk are presented or incorporated in any kind of (spatio-temporal) risk analysis. In such, the paper only resembles the application of a common machine learning approach for landslide susceptibility classification.

Besides this, I am not sure if prediction of landslide susceptibility using any kind of inventory-based analysis is really admissible for such a large territory with only 155 landslides. The landslides are not described at all regarding their typology or triggering mechanisms and their spatial relation to the geo-environmental factors used for susceptibility modelling. The sampling of negatives for modelling is questionable since it is trivial that on shallower slopes landslide susceptibility is low. With such a small landslide data set, negative sampling should be conducted with much greater care on steeper non-landslide slopes to investigate the ability of the method to correctly predict the landslides.

To conclude, the paper adds nothing scientifically new to what is already known from the literature and just represents a case study application that would need much more work to be publishable.

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