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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Automatic landslide flow direction estimation based on the geometric processing of the bounding box and the geomorphometric analysis of DEMs" *by* M. Niculiţă

Anonymous Referee #1

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The manuscript describes the application of a software code developed to classify the landslides bodies in terms of their length/width ratio and in terms of their main direction of flow. The software has been applied in a study area in Romania, where an extensive landslide inventory exists.

General comments:

Among the other things it seems to me that the paper lacks of a clear statement about the motivations of the study. An explanation of the reasons why it is important to classify landslides as long or wide is, probably, important and mandatory. Even if I'm not a

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native speaker I think that, currently, the manuscript is written in poor English and should be really improved before it can be accepted for publication. Figures can be enhanced. Figure 2 doesn't allow to observe, clearly the landslides polygons on the maps and contains text not described in the paper (SAGA combined Method, as an example). Figure 3 needs, at least, a legend. Figure 5 contains a duplicated legend. Figure 7 is not useful, since the AUROC is calculated using a single point. Moreover the stratified bootstrap replicates are not described in the text. I think that figure 6 is enough to describe the results. I do not have a lot of comments on the results and discussions session since it seems to me that the other problems must be resolved before the paper can be taken into consideration for publication. Concerning the algorithm used, I wonder if a comparison of the direction of the minimum bounding box (obtained using the midpoints) and the average aspect of the cells inside the landslide body (average aspect) can, perhaps work better than the difference in elevation along the flow path length.

Other comments: Please see the supplement

Please also note the supplement to this comment:
http://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2016-44/nhess-2016-44-RC1-supplement.pdf

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