

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC1
<https://doi.org/10.5194/nhess-2022-141-RC1>, 2022
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Comment on nhess-2022-141

Anonymous Referee #1

Referee comment on "Landsifier v1.0: a Python library to estimate likely triggers of mapped landslides" by Kamal Rana et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2022-141-RC1>, 2022

Compliments. Very interesting article and subject. In the following only few hints for improving the presentation of the work.

Abstract

Well written and rather clear. Perhaps should be stressed better the differences among three machine learning methods.
It could be useful to follow the same order of presentation that has been illustrated in the introduction (RDF,CNN,TDA).

1) Introduction

Very good the stress about the difference among earth-triggered and rainfall-triggered events. It is a common problem also today since there is not a standard way to classify landslide information

It should be better stressed that the whole work has been included in a new python library and that it is one of the unique in this field.

2) Data

Ok, all information required and necessary for the case study are listed correctly!

3) Methods

3.1 ok well clear. Perhaps, a brief explanation on the differences between earthquake and rainfall triggered shapes should be included even though the reader miss the key information about the classifier.

3.2 the method is presented clearly but in my opinion is missed a point: why we need all these information extracted by the DEM? It should be remarked at least to highlight you are presenting this second approach

3.3 here is clear that the output is a probability to belong to one or to the other class. And the presentation of the CNN method in more readable !

4) Landsifier model evaluation

from 198-202 it is not clear how the simulation was carried out. Please revise it and may be a short table could be helpful in this sense

4.1 OK well presented and clear

4.2 the same of 4.1

4.3 the same of 4.1

5) landsifier library

Ok for the riminder but since it represents the TITLE of the work probably few words should be spent here. For example: which functions are embedded in? Settings and options?

Is it fast or slow in computation? Just some characteristics that can involve the reader to download and test it.

6) Discussion

The discussion are well written but in my opinion should be rather organized in order to highlight better the outcomes of the study. Which is the best technique adopted? Cost e benefit of each technique?

Computational demand? Accuracy? All of the questions are expected by the reader after the presentation of the new python library.

from 267-282: this statement is OK but should be more integrated in the discussion of the current work: without good quality landslide data the performance of classification techniques may be not sufficient.

from 282-293: ok so should be stressed better the TDA peculiarities with respect to the other

from 294-310: ok but future outcomes and expected improvements should be better highlighted!

7) Conclusions

They are well reassured but in my opinion a the Landsifier novelties and key new element should better shown. In particular, are there any software application such as for landslide census or analysis at catchment scale?

Is it a tool useful for susceptibility mapping or also for Civil protection purpose??

Appendix

Well organized and rather clear. Perhaps the scheme B1 of appendix B should be moved to the chapter 5 and then described briefly since represents the core of your work (Landsifier library).