

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC2
<https://doi.org/10.5194/nhess-2021-212-RC2>, 2021
© Author(s) 2021. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on nhess-2021-212

Anonymous Referee #2

Referee comment on "Evaluation of filtering methods for use on high-frequency measurements of landslide displacements" by Sohrab Sharifi et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-212-RC2>, 2021

The paper "Evaluation of filtering methods for use on high frequency measurements of landslide displacements" deals with the effects of different filtering techniques to be applied to landslide displacement data in the framework of EWSs. The topic is largely relevant for the landslide community and addresses a very common problem.

The language is fluent and correct and the work is well designed and presented, although some improvements can be made, resulting in overall minor revisions.

Concerning the design, while it is interesting that you have studied as many as 12 different scenarios, some of them are not very likely to represent actual landslide behaviours. In particular, I strongly recommend that you include among the scenarios a power law increase representing a tertiary creep, which is probably the most relevant trend to be detected for an EWS. Also stepped lines (that is time series characterized by cycles of seasonal activations and stabilizations) would be interesting to be studied.

On the other hand, concerning the presentation, the results and discussions section would be better subdivided into subsections. One subdivision could be between results (objective description) and discussions (interpretations and comments). Further subsections could be added to improve readability and to separate different concepts and contents more effectively, both in the results and in the discussions sections. For example, the discussion section could be subdivided into 4 subsections, one for each filter that you analyzed, pointing out the advantages and disadvantages, and a final one to make comparisons, determine which one is better and in what circumstances and deliver the take home message. In particular, the take home message could be better highlighted, evidencing what is, in your opinion, the best filter in an operative situation. For example, in case one wants to apply Fukuzono's method, what filter would work best? And would you suggest a direct filtering on the inverse velocity (typically affected by peaks and strong variations) or an indirect filtering on velocity or even on displacement (typically presenting a power law acceleration before failure)?

Following are just few minor suggestions:

Line 132: "based on scaling" can be probably simplified into "by scaling".

309: you make reference to scenario 6 relative to fig 6 while in the caption of fig 6 there is no mention of any scenario.

534: please replace overstate/understate with overestimate/underestimate.