

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC1
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Comment on nhess-2022-172

Anonymous Referee #1

Referee comment on "Timing landslide and flash flood events from SAR satellite: a regionally applicable methodology illustrated in African cloud-covered tropical environments" by Axel A. J. Deijns et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2022-172-RC1>, 2022

The authors evaluate different SAR-based approaches to date landslide and floods time of occurrence. The main assumptions behind the research are: (i) the inventory of the event must be available; (ii) the timing of the event is completely unknown. The authors evaluate five approaches, based on Sentinel-1 amplitude, detrended amplitude, spatial amplitude correlation, coherence and detrended coherence time series in four study areas with different landscape types.

The research is well written and has high potential for publication. However, I have some concerns that I feel must be addressed:

- I believe the strength of the paper relies in the accurate comparison of those approaches, rather than in the new proposed approach. I'd change the title accordingly, as well as underline this in the text.
- Authors state that reducing the investigation time frame would increase the accuracy, however they consider that no time information is available, while all the methods require the inventory of the phenomena. Now, in cases in which the inventory of the event is available, and the study cases are multiple GH events, I believe the timing is more or less known (at least with ± 6 months of uncertainty). Why did you decide to make such assumption?
- It is not clear how, after processing, the time of occurrence is set by time series analysis.

- Coordinates missing in Figure 1. This figure must be improved.

Suggestions:

- Put coordinates outside each tile of figure 2 instead than into caption.
- Figures 2, 7 and 8 could be improved.
- I would condense the text. This would make it easy for readers to follow the manuscript flow. Sometimes the same details are repeated several times in the text.