

# ***Interactive comment on “Application of FLAIIR model for early warning system in Chibo Pashyor, Kalimpong, India for rainfall-induced landslides” by Abhirup Dikshit and Neelima Satyam***

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The authors appreciate the comments and suggestions for the improvement of the paper provided by anonymous referee. The detailed answers to general comments follow below.

1. I think that the paper should be considered as a technical note, as also indicated by the other two reviewers. From this point of view, I believe that if there aren't new aspects in the usage of a well-known model, the simple application of the same model to a new study area is not enough in itself to consider a paper as an original article.

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The author accept that a well-known model is applied but disagree about the manuscript to be considered as a technical paper. An accepted model (FLaIR) in this case applied to a different region (Darjeeling Himalayas) should not be considered as a technical paper as its analysis has a significant value in scientific community. 30% of worldwide landslide occurrence happens in Himalayan region, therefore application of the model and validating it is very important for the scientific community. This is a first of a kind study for Darjeeling Himalayas and both the reviewers would certainly agree that such study has yet not been attempted and is very important for future research purposes in achieving an effective early warning system. As a part of scientific community, the authors strongly emphasize that by considering it as a research paper it would boost further research which is the focus of the journal.

The detailed answers to specific comments are mentioned below:

1. English needs revision. There are several grammar and syntax errors that make reading difficult;

Thank you for the careful reading and constructive comment. The text has been revised accordingly.

2. The introduction has to be improved with more references (as also emphasized by one of the reviewer

The introduction has already been improved in terms of references as indicated by Referee #1. However, we thank you for the careful reading and has been marked in red for your perusal. If further improvements are required, the authors would be very happy to improve it.

3. In general, the quality of the figures is quite poor (e.g. Fig 2a: the writings are not easily legible, Fig 4: the unit of measurement in the legend is lacking and the graphic scale is not legible

Thank you for the careful reading and constructive comment. We have revised the

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figure 4 and Figure 2a.

4. Section 2 and Section 3 have to be modified in order to clarify the main features of the study area, then avoiding useless repetitions of similar information

Thank you for the valuable comment and the sections has been revised.

5. Line 21: “small”. Did you mean “short”?

Thank you for valuable comment. It meant short and has been revised.

6. Line 30-32: you should also indicate potential drawbacks of such methods: please add more references in order to justify this sentence

Thank you for careful reading and the text has been modified accordingly and marked in red.

7. Section 2.1 Geology: please rewrite this section by better clarifying the main features of the geology of the study area. In particular, you should evaluate if all the information reported in this section (including Fig. 3) can be considered as relevant in the economy of the manuscript;

Thank you for the careful reading and constructive comment. The text has been revised accordingly and marked in red.

8. Line 125-127: it is not clear, please rewrite

Thank you for careful reading and the sentence has been rewritten.

9. Line 199-200: it is the exact same sentence reported at line 130-131. You should avoid to repeat the same concepts;

It has been removed and apologise for repetition.

10. Line 322 et seq: please add further details about the estimation of FLAIR parameters;

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The estimation of FLAIIR parameters have already been discussed in in response to Referee #1 line 320-325 and marked in red for your perusal.

11. Line 346 et seq: how did you define the mobility ratio values? Please add further details;

The mobility ratio values have been discussed in line 350-355 in response to Referee #1. The text has been marked in red and for any further clarification, the authors will be happy to respond accordingly.

Please also note the supplement to this comment:

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2017-295/nhess-2017-295-AC2-supplement.pdf>

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2017-295>, 2017.

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