

## ***Interactive comment on “The alerting system for hydrogeological hazard in Lombardy Region, northern Italy: rainfall thresholds triggering debris-flows and “equivalent rainfall” method” by A. Cucchi et al.***

### **Anonymous Referee #2**

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I have read the contribution proposed by the authors on "The alerting system for hydrogeological hazard in Lombardy Region, northern Italy: rainfall thresholds triggering debris-flows and “equivalent rainfall” method" and I found it of potential interest for the Journal readers but still in a stage quite far from the baseline required for publication.

In particular:

1) the English of the manuscript is very poor and strongly hinders the understanding of the key concepts and methods. A complete rewriting is needed before a complete

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judgment could be feasible by the referees, in my opinion at least.

2) there is no introduction and, consequently, no comparison with the presently very rich scientific panorama on rainfall triggering of landslides, no explanation of which new contribution is offered by the paper nor any attempt at presenting the importance of the research in the framework of landslide prediction in a suitable geographical or geomorphological context

3) the methodology, although interesting and promising, is not clearly explained in some key parts. For example, 3.1) the rainfall data is not discussed in any details. 3.2) Why did you use the 5 km limit? 3.3) What did you exactly mean by “best conditions” for the choice of the right rain gauge? You only refer to some environmental variables which may be influencing rainfall measurements but I think here you require a more objective approach such as those recently proposed in the literature (see e.g. Segoni et al., 2014 NHESS)

4) results are not presented, there is only a discussion section. You need to present your result as in any standard scientific paper. Only afterwards you can discuss them.

5) Possibly connected with point 1, the manuscript is full of generic and misleading terminology that should be amended. Examples are sentences such as the one at page 276 row 16 “The modified CN method can be used to estimate the hydrological hazard of a basin portion...” or the one at pag. 274 row 1-3 “it is very unlikely that ..... they look well-correlated..... ” and so on.

Therefore, for the previously listed reasons and several not listed here, I deem the manuscript not ready for entering the publication stage even after a major revision. On the other hand, though, I have found several interesting points in the paper that deserve publication. For this reason I strongly recommend the authors to try to write a completely new paper using the same data and methodology and submit it again to the Journal, after revising all the parts with the help of the referees and editor’s comments.

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