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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Analysing the relationship between rainfalls and landslides to define a mosaic of triggering thresholds for regional scale warning systems" *by* S. Segoni et al.

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We would like to express our gratitude to the referee for the insightful comments, which we have answered point-by-point. We think that these comments contributed to improve the quality of the manuscript.

1 The cited work explains in detail the methodology, which here is summarized and used for a more complete and in-depth work: the methodology is applied at regional scale, it is applied in 25 test sites, a relevant work is accomplished to discuss the differ-

ences encountered in the thresholds obtained using the same methodology in different physical settings; moreover we investigate the possible relations between thresholds parameters and physical settings and between effectiveness of the threshold and number of landslides used for the calibration. This is, to our knowledge, an original piece of work. We modified the abstract, the discussion and the conclusions to better stress this point of strength of the manuscript.

2 The abstract was modified as suggested.

3 To meet the suggestion of the referee, table 2 was improved with additional columns showing some statistical indexes, commonly used in validation procedures.

4a This is an important part of our work: different alert zones have very different threshold equations. The differences depend on the peculiar physical settings of each alert zones. We have discussed and investigated this result in section 4.2.

4b To meet the suggestion of the referee, table 2 was improved with additional columns showing some statistical indexes, commonly used in validation procedures.

5 The threshold parameters are defined by means of a rigorous statistical technique and are not a "choice". The application of the methodology returns a precise set of parameters (α, β and NRG). To our opinion it would be trivial to check the sensitivity of the results to other set of values, which would have no empirical relation with the original dataset. Sensitivity analyses are used e.g. in physically based models to account for the incertitude of the input parameters (e.g. internal friction angle), but in our work α, β and NRG are not input parameters measured with a certain incertitude or selected arbitrarily. Instead, α, β and NRG are the outputs of a rigorous empirical correlation.

6 This part of the procedure was explained with more details, to make the manuscript stand-alone as suggested by the referee.

7 This part of the sentence, which was generic and could lead to misunderstandings,

was deleted.

8 The literature review is focused on methodologies currently employed in operational waning systems. In our opinion, this was more “straight to the point”. However, the suggested references were introduced to highlight the existence of other techniques that could potentially serve the same task.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 2185, 2014.