

General comments

The paper "Evaluating critical rainfall conditions for large-scale landslides by detecting event times from seismic records" is a very interesting paper with original approach. The combination of the tools and methods to define rainfall threshold to landsliding is interesting and the several steps of the analysis are presented. However, the reader can be lost in the used databases, in particular between what concerns the 2009 typhoon analysis and the rest of the chronical. The results can be discussed (detection of only 62 landslides, thresholds between 500/300mm...), or justified by figures completed (see below comments on the figures).

Specific comments

P2 L21: the event of 2009 is the only one mentioned, for the moment we can think that the research only focus on this event.

P3 L8: Date of the images? Number? Mapping only for the 2009 event.

P3 L23: Why 0.1km² Is it the limit of the automatic detection based on SPOT images? How many landslides were detected?

P3 L26: How we consider the progressive instability and the signal before the main failure?

P4 L3: Now we don't care about 2009 event. Why 2005-2014? What was the aim of 2009?

P4 L11: "only events with obvious signature", do you mean the 62 landslides in the fig.1? can you develop the characteristics of the signal that you can highlight with these 62 events?

P4 L19: how can you consider the lag time between rainfall / soil saturation... and failure?

P4 L29: I think the chosen method can be shortly developed here.

P4 L35: there is only Xiaolin landslide in this figure. So you focus on 2009 events? do you compared all the landslides detected by remote sensing (fig.1 is it landslides detected by seismic signal of remote sensing: to clarify) (how many by remote sensing?) with the seismic signal? an example of signal related to a smaller event than Xiaolin would be interesting (fig.3).

Do the SSLs have a significant signal also?

P5 L3: Now you are studying events between 2005-2014? It is a little bit confusing. How many typhoon events? don't you consider previous smaller rainfall events that could affect the mechanical properties of the slopes?

P5 L6: How can you consider the topographic, orographic effects?

P5 L10: 100km² is already large catchment.

P5 L2: rain event = typhoon?

P6 L4: 193 small landslides for which period?

P6 L15: EQ1 cohesion here is only considered for a discontinuity (C = 0)? Or for the specific material?

P7 L9/22: lower slopes VS steeper slopes... upslope VS downslope? Can you explain it? Is it a regressive erosion of the slope?

P7 L9/24 & 26: landslides for 2009 event? Or the detection of 62 landslides grounded on seismic signal among 686 inventoried landslides? What is the landslide seismic magnitude?

P8 L4: what about SSL?

Discussion: The discussion is interesting because it puts the results in perspective. Nevertheless, some points have to be clarify.

5.1. The authors highlight the fact that critical rainfall to trigger landslides has decreased since 2010 (500mm to 300mm) according to the results fig. 7. How many events the threshold is based on? The figure 7 is not so evident.

To explain these results, the authors question the Morakot typhoon. Was it an exceptional hydro-climatic event? The other solution is that instabilities induced by the 2009 typhoon are responsible of recent landslides. This idea should be developed here, and maybe associated to a map of the landslides scars (delineation of the departure areas) and differentiated according to the periods of the triggering...

5.2. The authors mention the fact that landslides occurred several types of rocks with different geotechnical behaviors, but the chosen geotechnical parameters (table 1) are identical. Why?

Effective rainfall, and rainfall duration thresholds according to the rock types are not clear in the figure 8, could another statistical analysis put the conclusion of the authors in obvious fact?

Figure

Fig. 2. Add legend for the detected landslide: Is it detected by seismic signal analysis? Is the point, the centroid of the landslide? Why not the delineation of the landslide body? Dates of the both satellite images here.

Fig. 3. Location of the detected landslides in 2009? Is there other spectrogram for previous landslides? Or after 2009? or associated to another landslide triggered in 2009: X spectrogram for 1 landslide. The star is the location defined with which seismic station?

Fig. 4. Maybe with the topography visible on the map?

Fig. 7. A) Is there only 1 event for the lowest limit?