

Review
on the paper

***Analysis of a landslide multi-date inventory in a complex mountain landscape:
the Ubaye valley case study***
by R. Schlogel et al.

The paper entitled ***Analysis of a landslide multi-date inventory in a complex mountain landscape: the Ubaye valley case study***, by R. Schlogel et al., represents an approach aiming at developing a landslide multi-date inventory through multiple sources. The case-study is represented by a well-known landslide hotspot of Europe, namely the Ubaye valley (South French Alps). Numerous sources of data (aerial photos and satellite images, geomorphological maps, field surveys and historical reports) were used to derive a comprehensive landslide inventory, meant to support the estimation of their multi-temporal occurrence.

General comments:

The above-mentioned paper addresses relevant questions with the scope of NHESS. The topic is not necessary completely new or innovative, but touches (not that detailed, though) an important issue within landslide hazard studies, increasingly-more debated nowadays, namely the occurrence and the potential propagation of uncertainties (in this case, induced by multiple data sources). The title and abstract are clearly formulated and unambiguously reflect the content of the paper, both providing concise summaries of the following approaches and foreseen results. All the mathematical formulas (symbols, units) are correctly used. The figures are enough, conclusive and of a good graphic and informational quality (small improvements will be detailed below). The references are up-to-date, numerous and conclusive (the authors clearly delimit their own contributions from the previous ones). The language is fluent and easy to read, and from a technical point of view is correct, precise and understandable (some minor suggestions will be provided as follows). The overall quality of the paper is high (good to excellent), yet some minor to moderate changes could be performed in the structure, as detailed below.

Specific comments:

1. structure: the paper would benefit out of a "*Discussions*" chapter, comprising a more detailed analysis of the uncertainties (which appear in form of an "uncertainty index" in Table 2). Some of the debated results would fit into such a chapter (as an example, the correlation between SAR coverage, forest distribution and landslide densities in relation with slope aspect), which could contain also a more detailed description of the limitations imposed by the usage of different scale and coverage thematic maps or remote sensing products. Besides mentioning the source of uncertainties, a description (as a result of a personal judgment) of the potential propagation and amplification of uncertainties towards the final result would bring an important added value to the paper.

2. specific topics: in the "*Study area*" chapter there is almost no information on the regolith; this info could be important in understanding the relationship among weathered deposits, slope orientations, land-cover (especially forests; it is mentioned the 40% coverage, but without any other specification in terms of altitude, slope angle or

orientation) and landslide densities. This correlation could be better explained at page 2064, lines 23-28 (Fig.8 gives info on the landslide densities but gives no clue on the slope orientation; should it be Fig.9?). In the mean time, the description of regolith (even rough) distribution could be correlated with a more detailed landslide typology (there are mentioned mudslides, but there is almost no info on the strata affected by the deep-seated landslides, either if it is in form of weathered material or bedrock)

3. figures: I personally find Fig. 3 a little bit hard to follow and I believe that filling it in with the information from Fig. 2 could make it easier understandable.

4. language: how would the authors rank the Riou-Chanal, Aiguettes and Pra Bellon landslides in terms of involved material (soil/debris/rock)?