

## ***Interactive comment on “A new web-based system to improve the monitoring of snow avalanche hazard in France” by E. Bourova et al.***

**E. Bourova et al.**

bourova@gmail.com

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Dear Dr. Harvey,

First of all, we would like to thank you for helpful comments on the manuscript and feedbacks on the avalanche web platform. We adapted the text of the paper accordingly to these comments. The feedbacks on the web application are precious for us. They suggest several improvements that we expect to address rapidly in future versions of the platform. Most of these issues have been already proposed to the French Ministry of the Environment in the frame of next milestones in this project.

Point-by-point answers:

Comment: Nevertheless, the paper does not really present novel concepts in manage-

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ment of avalanche data. In my opinion the paper is not really scientific. It is more a description on how different avalanche data are implemented into a web-based system to monitor and evaluate avalanche paths.

Reply: We agree that the novelty of the paper doesn't concern research results in snow avalanches. The objective of our work was to develop a new modern tool for avalanche data management that contributes to research advancements. The new platform improves the consistency and quality of collected data by providing an assisted workflow for avalanche observers. It helps researchers to access and to jointly exploit data of different sources. We believe that our approach can be transferred to avalanche records from other countries and can be helpful to other researchers and engineers in snow sciences.

Comment: Data collection and modification of the avalanche map needs clear guidelines.

Reply: In section 2.2 the paper describes a typical procedure of data acquisition for the avalanche map (CLPA) protocol. The details of the CLPA protocol has already been published previously. The corresponding references have been given in Introduction. Following your comment, we adapted the text of section 2.2 by explaining clearly this point with relevant bibliographical references.

Comment: The authors do not really explain how collected data is peer-reviewed.

Reply: Dr. Zweifel, a referee for this manuscript, pointed that the term “peer-reviewed” would not be appropriate for described procedure because the process of peer-review is mostly correlated to scientific writing. The “cross-check” term is more accurate. We thus changed the term in the text. In section 2.2 describing the CLPA protocol, we added an explanation of the cross-check procedure. In section 2.1 describing the EPA protocol, we added a relevant bibliographical reference that describes the cross-check procedure.

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Comment: Further they mention a requirement analysis but the paper does not explain to what kind of users this new platform mainly focuses.

Reply: In section 3, we added a description of the end-users mainly focused by the new platform.

Comment: Working through the webpage is not so intuitive and need some introduction. Looking at specific avalanche path on the map, I could not find any further description of past avalanches or specific object data. It seems obvious to click on an avalanche path to get more information, but nothing happens there, at least on the public access.

Reply: The construction of the avalanche platform follows consecutive steps, annually planned and approved by the French Ministry of the Environment. The platform is aimed at several end-user groups with different needs. We searched a compromise to address the needs of these users, depending on available resources. The needs of observers, researchers and stakeholders have been prioritized in order to enable consistency, quality and interoperability of collected data and to provide full data access for concerned users. This access is reserved to project members and partners.

We are now working on improving data access for general public, in French and also in English. Recently, we renewed output materials to benefit from EPA-CLPA-SSA data interoperability provided by the new platform. The materials are publically available in French version. An English version of the portal is under construction. For the moment, we translated main output materials in English. They are available from direct links but not yet related to the main portal:

Lists of EPA events:

[ftp://avalanchesftp.grenoble.cemagref.fr/epaclpa/EPA\\_listes\\_evenements\\_EN/](ftp://avalanchesftp.grenoble.cemagref.fr/epaclpa/EPA_listes_evenements_EN/)

List of CLPA sheets:

[ftp://avalanchesftp.grenoble.cemagref.fr/epaclpa/CLPA\\_fiches\\_signalétiques\\_EN/](ftp://avalanchesftp.grenoble.cemagref.fr/epaclpa/CLPA_fiches_signalétiques_EN/)

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Finally, we are also planning to connect geographic maps to textual description of past avalanches by direct links, as you suggest. To implement this, we need first to migrate geographic data from the actual ArcGIS database into a common database containing textual and geographic information under PostgreSQL/PostGIS. These developments are scheduled in future versions of the platform.

The above points are summarized in Section 6 of the paper.

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