



Relative contribution of structural inheritance and glacial morphology on the post-glacial slope destabilization. The Séchilienne slope case study (French western Alps).

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In the main Alpine valleys, the chronological constraints about the onset of the slope movements following glacial retreat are scarce. The southern part of the Belledonne massif (French western Alps) along the Romanche valley is affected by numerous slope destabilizations. A detailed geomorphological study using a high resolution LIDAR digital model elevation, allows to characterize the structural framework, the evolution of the glacial retreat and the distribution of the gravitational instabilities. The systematic survey of (i) the main fracturing and (ii) the glacial and gravity morphological witness along the slopes of the Romanche valley coupled with (iii) cosmogenic ^{10}Be dating provides a regional view of the dynamics of slope destabilisation in this area. The proposed scenario allows to evaluate the relative influence of different triggering factors such as seismo-tectonic stresses and climatic changes. These data also allow to propose a consistent dynamic destabilization model of a major landslide ($> 100 \times 106 \text{ m}^3$) in relation with the last episode of glacial retreat $\sim 21\text{ka}$ ago.