

**Title: Creation of a 3D model Mont Blanc massif based on Lidar scans and evolution**

**Contact persons**

*Two people (one has to be professor/MER)*
  
 Prof. M. Jaboyedoff

**Context**

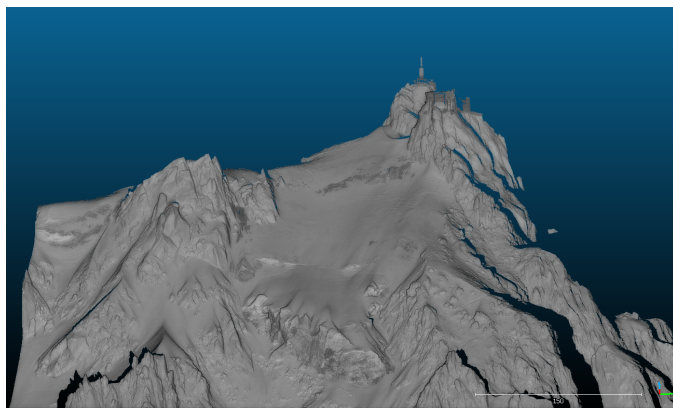
The climate change induces glacier melting and rockfall at high altitude. The group risk started to create a full 3D digital elevation model at high resolution. This will a “zero” stage that can be used for the future evolution. All the acquired date must be now put in a large e3D model, including analysis of the past changes, based on old pictures. The past rockfall structure and event will also be analyzed. And probably that during the Master thesis event will occur and then the student will go to analyze them.

**Aims and Methods**

The goal is first to create a full 3D model, and to add to it the changes using old documents. The second objective is to analyze the structure that led to the past event. In addition, the aspect of large public communication implies that the master student must work on graphic quality.

**References**

- Guerin, A., Ravel, L., Matasci, B., Jaboyedoff, M. & Deline, P. 2020. The three-stage rock failure dynamics of the Drus (Mont Blanc massif, France) since the June 2005 large event. *Scientific Reports*, 10, 17330, doi: 10.1038/s41598-020-74162-1.
- Matasci, B., Stock, G.M., Jaboyedoff, M., Carrea, D., Collins, B.D., Guérin, A., Matasci, G. & Ravel, L. 2018. Assessing rockfall susceptibility in steep and overhanging slopes using three-dimensional analysis of failure mechanisms. *Landslides*, 15, 859-878, doi: 10.1007/s10346-017-0911-y.
- Matasci, B., Jaboyedoff, M., Ravel, L. & Deline, P. 2015. Stability Assessment, Potential Collapses and Future Evolution of the West Face of the Drus (3,754 m a.s.l., Mont Blanc Massif). 791-795, doi: 10.1007/978-3-319-09057-3\_134.



**Website**

**Prerequisite**

Indicate if the student must take some course or module