

EGU2020-9906

<https://doi.org/10.5194/egusphere-egu2020-9906>

EGU General Assembly 2020

© Author(s) 2020. This work is distributed under the Creative Commons Attribution 4.0 License.



UAV observation of the recent evolution of the Planpincieux Glacier (Mont Blanc – Italy)

Daniele Giordan¹, Niccolò Dematteis¹, and **Fabrizio Troilo**²

¹Research Institute for Geo-Hydrological Protection, National Research Council of Italy, Torino, Italy

(daniele.giordan@irpi.cnr.it)

²Safe Mountain Foundation, Courmayeur, Italy

Planpincieux is one of the glaciers located on the Italian side of the Mont Blanc (Italy). This glacier is monitored using a permanent monoscopic time-lapse camera since 2013. In 2019, the frontal part of the glacier has been characterized by a critical acceleration that could trigger a large ice avalanche able to reach the underlying Planpincieux village. During the emergency, the working group composed of Fondazione Montagna Sicura, CNR IRPI and the Aosta Valley Region Authority improved the monitoring system with a ground-based SAR to control the glacier evolution. An important data source used for a better understanding of the structure of the more unstable glacier sector has been the acquisition of a sequence of digital terrain models (DTMs) acquired by unmanned aerial vehicles (UAV) and helicopters. The approach adopted for the DTM generation is the acquisition of a photo sequence and the application of the structure from motion algorithm. The investigated area of the glacier is located in high-mountain environment and is characterized by a complex topography that does not facilitate the use of UAV. But the availability of a sequence of DTMs has been very useful for the improvement of the knowledge of the current state and recent evolution of the Planpincieux Glacier.