

# Séminaire

**Mercredi 2 Octobre 2013, 11h00**  
**Salle Louis Liboutry, LGGE**

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## **What happened on Aletsch glacier on the 4th March 1926 ?**

On the 4th of March 1926, a group of climbers went missing on Aletsch glacier, Switzerland. Their remains were discovered only in 2012. The goal of this talk is to reconstruct the trajectory of the corpses in the glacier in order to evaluate where they were buried and to clarify the causes of their deaths. The method consists of integrating the velocity field of a fully three-dimensional glacier model backward-in-time.

This model [1] is presented in the first part of the talk. On the one hand, the ice flow is described by the full Stokes equation and the glacier surface evolution is described by a transport equation for the Volume-Of-Fluid. Both problems are solved on two fixed grids using the finite element and finite volume methods. On the other hand, daily surface melt and accumulation are calculated on the basis of climate data. The model is validated against measurements made throughout the 20th century.

Equipped with such model, the trajectory of the corpses of the mountaineers is computed [2]. As a first result, the trajectory almost emerges at the surface in 1926, giving a new and global in space and time validation of the glacier model. As a second result, the immersion location where the climbers presumably died on the glacier is localized with great confidence. Finally, this new development allows us to understand what likely caused their deaths in 1926.

### **Références**

[1] G. Jouvet, M. Huss, H. Blatter, M. Funk, Modelling the retreat of Grosser Aletschgletscher in a changing climate, *Journal of Glaciology*, 57(206), 2011.

[2] G. Jouvet, M. Funk, Modelling the trajectory of the corpses of mountaineers who disappeared in 1926 on Aletschgletscher, Submitted.