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Swiss Academy of Sciences  
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Académie des sciences naturelles

## **#4 - Regional field trip**

### **Mountain permafrost in the Valais Alps between Verbier and Zermatt**

- ✓ **Location:** Valleys of Bagnes (Verbier) and Zermatt in Switzerland
- ✓ **Organization:** Christophe Lambiel and Reynald Delaloye (scientific part), Chloé Barboux (hiking trips during the excursion)
- ✓ **Universities / Labs:**
  - Department of Geosciences, Geography, University of Fribourg, Switzerland
  - Institute of Earth Surface Dynamics, University of Lausanne, Switzerlandwith the support of the Swiss Geomorphological Society and the Swiss Academy of Sciences
- ✓ **Duration:** 29 June - 1 July (return on 2 July)
- ✓ **Maximum number of participants:** 20
- ✓ **Description:**

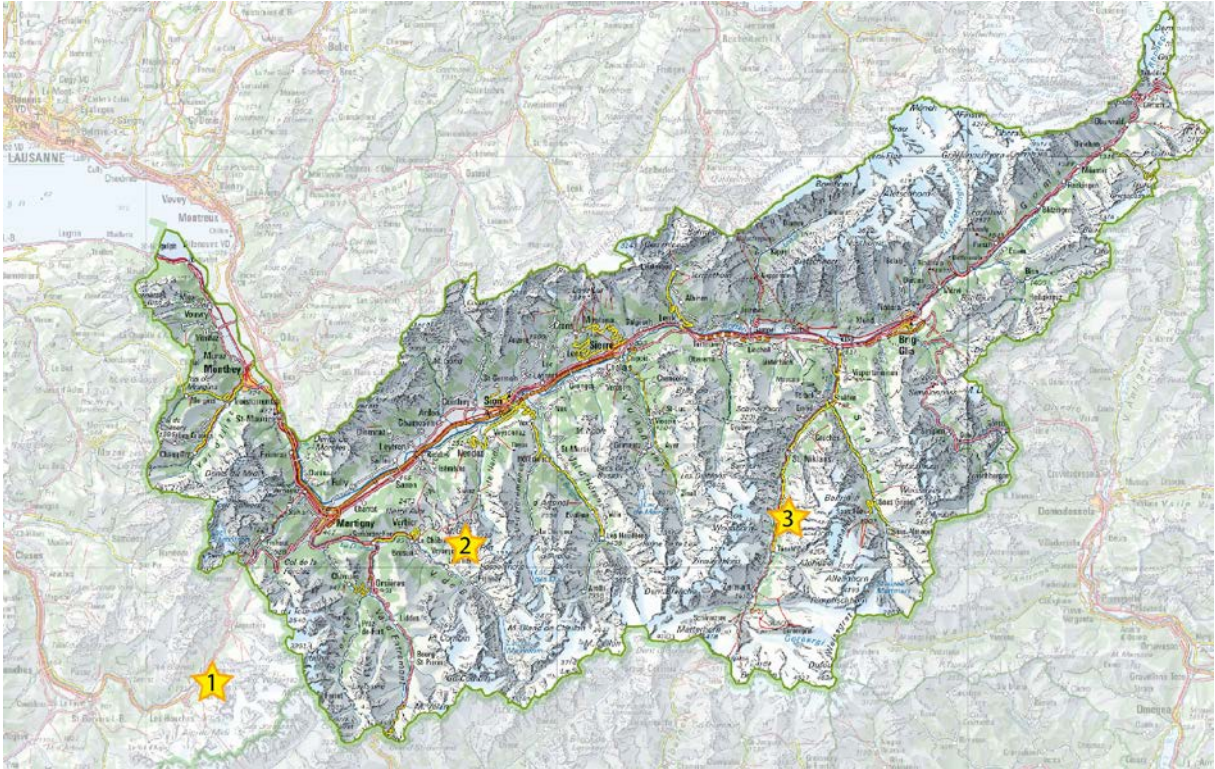
The field trip aims at visiting various glacial and periglacial geomorphic systems in the Valais Alps. While enjoying wonderful view of highest peaks of the Swiss Alps, it is intended to present and discuss the permafrost monitoring system spread out in the Swiss Alps, some human infrastructures in mountain permafrost, and hazards related to permafrost sites.

Hot spots will be first the Tortin glacier and its ice-cored lateral moraine as well as the Mont-Fort summit in the Verbier area (3330 m a.s.l.), later the long walk to fast moving rock glaciers in the valley of Zermatt (Gugla, Dirru, Grabengufer) and finally the crossing of (one of) the world longest pedestrian suspended bridge (490 m) over the gully affected by rock falls from the Grabengufer permafrost area.

The excursion will take place in alpine environment, most often at altitudes between 2000 and 3000 m a.s.l, and is physically demanding. A 10-hours walk is planned on day 2, starting with an ascent of 1400 m in height and without any short-cutting opportunity! Adequate equipment (good hiking shoes and all-weather clothes) and a fit physical condition are expressly required.

**Contact :** Chloé Barboux, [chloe.barboux@unifr.ch](mailto:chloe.barboux@unifr.ch), +41 26 300 90 26

**Preliminary program**  
**(29 June – 1-2 July 2018)**



*Regional map: 1. Chamonix, 2. Verbier, 3. Hebrigen (valley of Zermatt)*

✓ **Thursday 28 June : Information meeting**

Place and time to be defined

✓ **Friday 29 June: (day 0)**

Transfer from Chamonix (France) to Le Châble (Switzerland) by train in late afternoon.

Meeting point at 4.30pm in front of the Chamonix Gare station. Departure from Chamonix at 4:54pm, arrival in Le Châble at 7:17pm.

Dinner and overnight in Le Châble (Hôtel Giétroz)

✓ **Saturday 30 June: (day 1)**

**Glacier and permafrost in the Mont Fort area**

The trip will lead us from Le Châble to the Gentianes pass and the top of the Mont Fort (3330 m a.s.l.) by minibus and cable car. The excursion will focus on the following topics: Lateglacial and Holocene evolution of the La Chaux glacier, recent and current evolution of the Tortin glacier and the Gentianes ice-cored moraine, infrastructures in mountain permafrost, permafrost monitoring at the top of the Mont Fort, where we will enjoy a 360° view on the Valais Alps and the Mont Blanc

massif. We will go back by foot from Col des Gentianes to La Chaux (about one hour of hiking, 500 meters elevation way down), with a break to the Mont Fort hut for lunch.



*The Tortin glacier and the top of Mont-Fort (3330 m a.s.l.)*

Back to Le Châble and transfer by train to Herbriggen. Departure from Le Châble at 4.48pm, arrival in Herbriggen at 19.21pm

Dinner and overnight in Herbriggen (Hotel Bergfreund)

✓ **Sunday 1 July: (day 2)**

***Rapidly moving rock glaciers and related hazards in the Valley of Zermatt (Mattertal)***

Extraordinary, but long and physically demanding hike from the village of Herbriggen (1200 m a.s.l.) up to the snout of the Gugla and Dirru rock glaciers (2600 m a.s.l.), crossing then to the Europa hut under the look of some of the highest peaks of the Swiss Alps for having finally a look on the (formerly) exceptionally fast Grabengufer rock glacier and its downward connected torrent prone to rock falls and debris flows.

About 8-10 hours of walk on alpine hiking trail (1400 meters elevation change)

Dinner and overnight in Herbriggen (hotel) or possibility to travel back by the last train to Geneva or Zurich (but not Chamonix or Milano)



*The gully under the Grabengufer rock glacier with the former suspension bridge. The new one is two times larger and higher!*

✓ **Monday 2<sup>nd</sup> July: (return day)**

- Free time to enjoy Zermatt or any other place
- Travel back to Chamonix, Geneva, Zurich or Milano



*View from Europaweg on the Weissshorn (4506 m a.s.l.)*

## ***General information***

### ✓ **Transportation**

All travels from Chamonix to Le Châble, from Le Châble to Herbrigen and then from Herbrigen to your final destination (airport?) in Switzerland are foreseen by train.

### ✓ **Accommodation**

Hotel Giétroz, Le Châble

Hotel Bergfreund, Herbrigen

### ✓ **Meal**

Every day, breakfast and dinner at the hotel.

Lunch at the Mont Fort hut the day 1 and backpack lunch supplied for day 2.

Please don't forget to **inform us about special diets!**

### ✓ **Price include:**

Option A (all inclusive) – 550€

- Organization of the excursion

- Accommodation and meals

- All public transports from Chamonix (day 0) to your final destination in Switzerland on the return day (1 or 2 July), including a day pass for the return day (all-in one ticket to travel by rail, road and waterway throughout the whole Switzerland).

Note that choosing this option only allows you to take part to the local excursion Aiguille du Midi on 29 June (and not Dérochoir).

Option B (medium) – 340€

- Organization of the excursion

- Accommodation and meals

Travel from Chamonix to Le Châble, from Le Châble to Herbrigen and to leave Herbrigen on the last day is of the responsibility of the participant.

Option C (minimal) – 100€

- Organization of the excursion

Accommodation and meals, as well as travel from Chamonix to Le Châble, from Le Châble to Herbrigen and to leave Herbrigen on the last day is of the responsibility of the participant.

### ✓ **Price does not include:**

It is strongly recommended that you are adequately insured for all of the activities that you will be taking part (hiking) and specially to **take out insurance for repatriation in case of accident**. If needed, we would advise you personally about this.

### ✓ ***What you need for each hiking day***

Backpack

Hiking boot (no baskets!) and hiking socks

Hiking gear: functional T-shirt (both breathable and moisture-regulating), fleece, suitable pair of pants (take care to weather in mountain). Avoid extra gears and prefer light ones.

Waterproof/windbreaker jacket

Raingear (poncho can drape over your backpack and save you expense of a waterproof jacket)

Water bottle or camel bag

Cap, Sunglasses, Sunscreen

Thin gloves and Beanies

*Optional:*

Hiking poles

Gaiters

First Aid kit and personal medication

Binoculars

✓ **What you don't need**

Every evening we will come back to the hotel where you will find all your personal stuff again (Options A and B).

Lunches for the two main excursion days (Options A and B only).

✓ **Difficulty, health and fitness**

This excursion is physically demanding, and participants should have a good level of fitness (about 10h hiking are foreseen on day 2, most often between altitudes of 2000 and 3000 meters).

For your own safety, please advise us in advance of any health particular condition such as asthma, diabetes, etc.

✓ **Program adaptation:**

The field trip will take place by any weather conditions. In case of bad weather, the program will be adapted accordingly.

A small uncertainty exists about the working of the Gentiannes and Mont Fort cable cars during the planned excursion (possible maintenance works). Where appropriate an alternative plan in the area will be organized.

A participant who is obviously not meeting the (physical) requirements for day 2 will not be accepted for the long walk. No alternative program will be organized.