



# BASTIEN RUOLS

Engineer, Geophysicist



+33767735700



bastien.ruols@unil.ch



Chemin de Montelly 46, 1007 Lausanne, Switzerland



## EDUCATION

- 2020 – 2024**    **PhD in Glacier Geophysics**  
*University of Lausanne (UNIL), Lausanne, Switzerland*  
Supervised by Prof. James Irving
- 2017 – 2019**    **Master of Science in Earth and Space Physics and Engineering**  
*Technical University of Denmark (DTU), Copenhagen, Denmark*
- Fall 2018**    **International Asian Studies Program in Earth System Sciences**  
*Chinese University of Hong Kong (CUHK), Hong Kong, China*
- 2012 – 2017**    **Bachelor and Master of Engineering in General Engineering**  
*Ecole Centrale de Nantes (ECN), Nantes, France*



## PROFESSIONAL EXPERIENCE

- 2020 – 2024**    **Doctoral Researcher**  
*University of Lausanne (UNIL), Lausanne, Switzerland*
- Development of a drone-based GPR system for alpine glaciological applications
  - Fieldwork organization, planning, logistics and management
  - Data acquisition, management, and analysis
- 2020 – 2024**    **Teaching Assistant**  
*University of Lausanne (UNIL), Lausanne, Switzerland*
- Vector Calculus
  - Geophysics Field Camps
- Fall 2016**    **Project Manager Assistant**  
*General Electric, Stafford, England*
- Offshore wind farm project
  - Project coordination, organization and logistics
- Spring 2016**    **Supplier Quality Engineer Assistant**  
*SAFRAN Aircraft Engines, Gennevilliers, France*
- Development of monitoring indicators



## PROJECTS

- Spring 2019**    **Master's Thesis – Geological Survey of Greenland and Denmark (GEUS)**  
The electrical conductivity of the Nuussuaq peninsula from magnetotelluric data.
- Spring 2018**    **Project Synthesis – DTU Space**  
Sea level rise in Norway : prediction and visualization.
- Volunteering**
- Spring 2015**    • **Engineering project**, *Nantes Eau Brésil, Lagoa Encantada, Brazil*  
Installation of a drinking water distribution system in a remote village.
- Spring 2017 & Fall 2018**    • **English teacher projects**, *South-East Asia and Hong Kong*  
Teacher, speaker and worker in several NGOs.



## PRESENTATIONS AT CONFERENCES

---

## LANGUAGES

---

- French C2
- English C1
- Spanish B1/B2
- Chinese A1/A2

**American Geophysical Union 2023** – onsite talk (12/23)  
*High-density 4D GPR data acquisitions over three Swiss alpine glaciers.*

**Summit on Drone Geophysics 2023** – online talk (10/23)  
*Final configuration of our drone-based GPR system for glacier surveying.*

**European Geosciences Union 2023** – onsite interactive poster (04/23)  
*High-density 3D and 4D data acquisitions over alpine glaciers using a newly developed drone-based system.*

**American Geophysical Meeting 2022** – online talk (12/22)  
*Drone-based GPR for high-density 3D/4D acquisitions on alpine glaciers.*

**European Geosciences Union 2022** – onsite talk (05/22)  
*Drone-based GPR system for 4D glacier data acquisition.*

**Polar Radar Science 2022** – online talk (04/22)  
*Drone-based GPR system for alpine glacier surveying.*

**Summit on Drone Geophysics 2021** – online talk (11/21)  
*Development of a drone-based GPR system for alpine glacier surveying.*

## COMPUTER SKILLS

---

- adv. = advanced  
int. = intermediate  
bas. = basic

## PROGRAMMING

- MATLAB adv.
- Python bas.
- R bas.

## SOFTWARE

- MS Office adv.
- Latex int.
- QGIS bas.
- ArcGIS bas.
- Pix4d int.
- SolidWorks bas.
- Adobe int.

## HOBBIES

---

- Sports:
  - skiing
  - alpinism
  - hiking
  - tennis
  - judo
- Adventure:
  - bikepacking
  - sailing
  - hitchhiking
- Travel and Culture
- Videomaking
- Reading
- Boardgames



## AWARDS

---

**EGU22** – Outstanding Student and PhD candidate Presentation (OSPP)



## PUBLICATIONS

---

**Ruols B, Baron L, and Irving J** : *Development of a drone-based ground-penetrating radar system for efficient and safe 3D and 4D surveying of alpine glaciers.* Accepted by the Journal of Glaciology on September 2023.  
doi: S0022143023000837.



## SCIENTIFIC OUTREACH

---

**Impressions from the field : our journey to the Otemma glacier**

– [Youtube video](#) – Screened at :

- Journée Romande de la Géoinformation 2023 – 11/23
- Polar Film Festival 2023 – 09/23
- Alpine Glaciology Meeting 2023 – 02/23

**Pint of Science, Lausanne** – onsite talk – 05/23

*Un nouvel instrument géophysique pour l'étude des glaciers alpins suisses.*

**Au coeur des glaciers Suisses - SciencEscape** – [Youtube video](#)

**La Cabane des Diablerets Scientifique** – onsite talk – 01/22

*Ce glacier sous nos pieds.*



## WORKSHOPS

---

**Swiss Polar Institute** – Switzerland

- *Technical Training for Glaciated Terrain* – 06/23
- *Health and Safety Training* – 04/22

**Summer School of Alpine Research 2022** – Innsbruck, Austria  
*Close range Techniques in Alpine Terrain* – 09/22

**Science Filmmaking Marathon 2022** – Zurich, Switzerland – 09/22