



RGIK Introduction

(short version for PermaCOST training school)

On behalf of the RGIK ExCom:
Line Rouyet, Francesco Brardinoni, Yan Hu

2) General Background

RGIK IPA Action Group (2018-2023):

- Led by Reynald Delaloye, the Action Group was launched at EUCOP5 in Chamonix (2018) with the objective *“to sustain the first steps toward developing of a network dedicated to rock glacier inventorying (mapping) and worldwide rock glacier monitoring, along with the definition of standards.”*
- In 5 years, RGIK developed key reference documents (guidelines) for promoting the generation of comparable Rock Glacier Inventory (RoGI) and Rock Glacier Velocity (RGV) products. It has been regularly used as Action Group success story by the IPA Council!
- The Action Group formally ended at EUCOP6 2023 in Puigcerdà (June 2023).



2) General Background

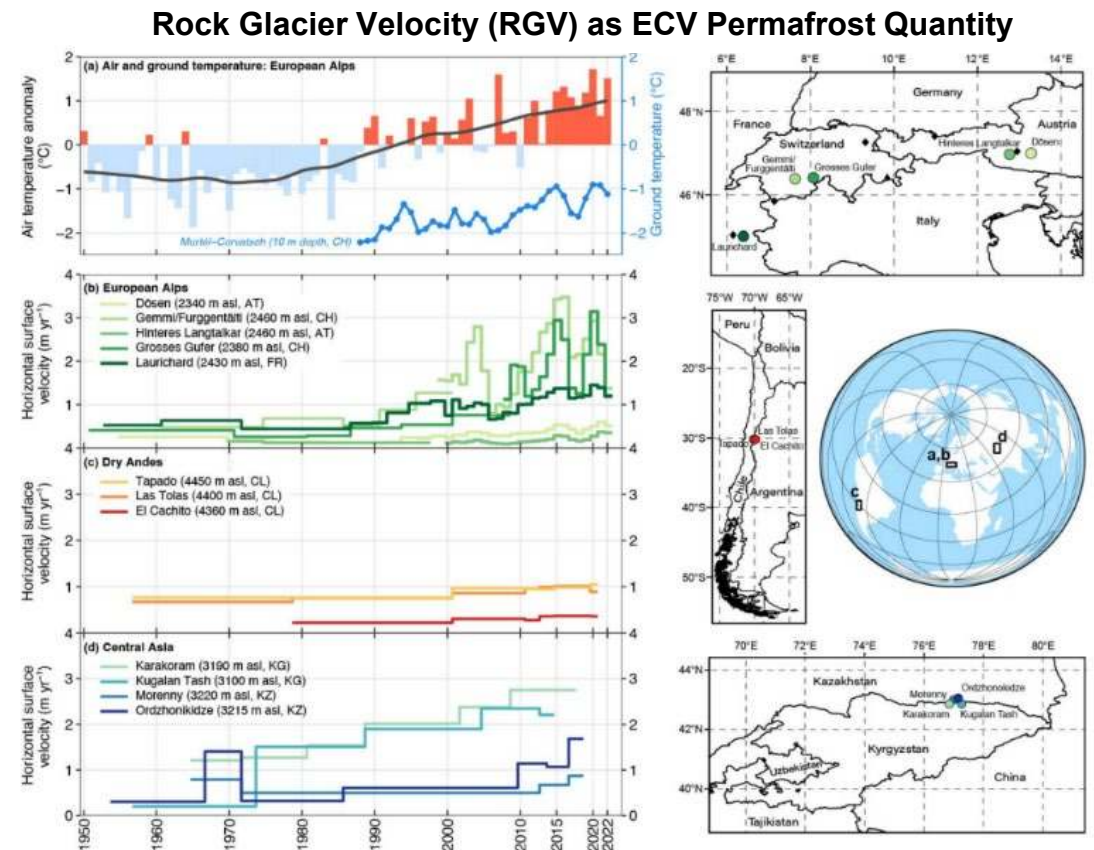
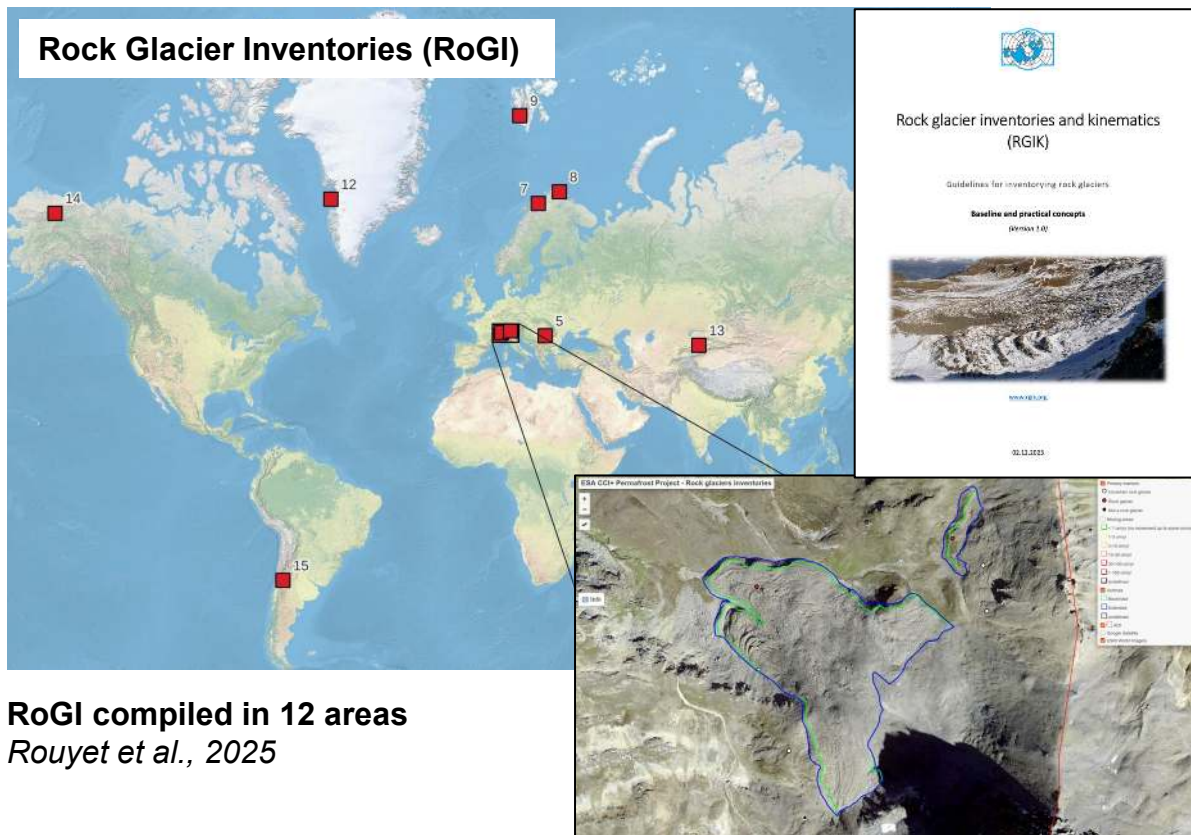
Transition period (2023-2024):

- June 2023: **Puigcerdà Commitment** (EUCOP2023): Intention to foster the RGIK activities and lay the foundation of a sustainable structure within the IPA
- Early 2024: Kick-off of the **Interim Executive Committee** to transition to an IPA Standing Committee.
- 29.05.2024: First RGIK **General Assembly Meeting**.
- 06-07.06.2024: Electronic vote on **Bylaws** and election of **ExCom** members.
- 16.06.2024: RGIK is unanimously approved as **Standing Committee** by the IPA Council, at the 12th International Conference on Permafrost (ICOP24) in Whitehorse, Canada.

Find our **Bylaws** on the website: <https://www.rgik.org/about-rgik/>

2) RGIK Mission

- The mission of RGIK is to coordinate the global compilation of **standardised rock glacier products**, and to foster **international collaboration** and advancement in the **understanding of rock glaciers**.
- Focus on two main products: **Rock Glacier Inventory (RoGI)** and **Rock Glacier Velocity (RGV)**.



2) RGIK 2026–2028 Leading Team

The RGIK Executive Committee (ExCom) is the governing body of RGIK.

The RGIK Advisory Board (AB) is the counselling body providing advice to the ExCom.

ExCom



DIEGO CUSICANQUI
CO-CHAIR, FRANCE



LINE ROUYET
CO-CHAIR, SWITZERLAND & NORWAY



FRANCESCO BRARDINONI
ITALY



YAN HU
SWITZERLAND



AJAY KUMAR
INDIA



TYLER MENG
USA



CÉCILE PELLET
SWITZERLAND



MISHELLE WEHBE
CANADA

AB



LUKAS ARENSEN
CANADA



REYNALD DELALOYE
SWITZERLAND



SHELLEY MACDONELL
NEW ZEALAND



LIN LIU
CHINA



2) RGIK 2024–2026 main activities

- **Growing community:**
 - From 229 members from 29 countries (2024)
 - To 262 members from 33 countries (2025)
 - **Today: 286 members from 33 countries (2026)**
- **Annual General Assembly meetings in May - June**
- **RGIK promotion at conferences :**
 - ICOP2024: rock glacier session and side-meeting
 - EGU2025: joint rock glacier session, social event and joint course with GTN-P
 - RCG2025: rock glacier session
 - IAG2026: rock glacier session
 - DACH2026: collaboration on PermaCOST workshop
 - ACOP2026: rock glacier session and side-meeting

✉ info@rgik.org

Join RGIK Today!

2) RGIK 2024–2026 communication



Official Launch: 01 June 2025

- RGIK Seminar recordings
 - Archive of past recordings organised by calendar year.
 - Future recordings shared here immediately after each seminar.
- Training videos, other relevant videos, etc.

Subscribe to our YouTube channel!

WWW.YOUTUBE.COM/@RGIKORG



Rock Glacier Inventories and Kinematics (RGIK)

@rgikorg • 63 subscribers • 30 videos

This channel hosts the videos of the Rock Glacier Inventories and Kinematics (RGIK) IPA ...more

 Subscribed

Videos Playlists C

Latest Popular Oldest



Detection and reconstruction of rock glacier kinematics from Landsat imagery over 24 years

37 views • 1 month ago



An inventory of rock glaciers in the Spiti Basin, NW Himalaya, using high resolution imageries

37 views • 1 month ago

Is this a rock glacier or something else?

Uncertainties in understanding these potential polygenic landforms with an example from Greenland

Andreas Kellerer-Pirklbauer (1)

(†) Department of Geography and Regional Science, University of Graz, Graz, Austria (Cossentin - The mountain processes and hazards group)



Is it a rock glacier or something else?
82 views • 4 months ago

3) RGIK Working Groups

Working groups are the core of RGIK activities. They are smaller groups focused on specific aims and dedicated to concrete outcomes such as documents, tools, procedures, scientific support, etc. Currently five WG are ongoing or planned.

- **Rock Glacier Inventory (RoGI)** Coordinator: Yan Hu
- **Rock Glacier Velocity (RGV)** Coordinator: Line Rouyet
- **Machine Learning (ML)** Coordinator: free spot
- **Equity, Diversity, and Inclusion (EDI)** Coordinator: Mishelle Wehbe
- **Data Management (DM)** Coordinator: Cécile Pellet

Interested in taking part of one working group? Please contact the Excom coordinator!
To propose a new working group please contact info@rgik.org !

3) RGIK Working Group – RoGI



permafrost
cci



- **RoGI Tools:** Updated RoGI exercises in Switzerland <https://www.rgik.org/resources/>

Baseline Concepts and Guidelines

QGIS Tools

Datasets

RGIK Reports

✓ RoGI QGIS Template

^ RoGI Exercise in the Goms Valley, Switzerland

A QGIS-based exercise that is rated an easy level, containing mostly mono-unit rock glacier systems.

Last Updated: 27 November 2025

Please document any questions, suggestions, or thoughts here: [Feedback Form](#)

Download

- **RoGI database** in prep
- **Publication:**
 - Rouyet, L., Bolch, T., Brardinoni, F., Caduff, R., Cusicanqui, D., Darrow, M., et al. (2025). Rock Glacier Inventories (RoGIs) in 12 areas worldwide using a multi-operator consensus-based procedure. *Earth System Science Data*, 17(8), 4125–4157. <https://doi.org/10.5194/essd-17-4125-2025>
 - Brardinoni, F., Vivero, S., Barboux, C., Bodin, X., Cicoira, A., Echelard, T., et al. (2026). RGIK guidelines for compiling consistent rock glacier inventories. *Geomorphology*, 492, 110050. <https://doi.org/10.1016/j.geomorph.2025.110050>

RoGI Portal

Filters

▼ Inventory name (optional)

All inventories

Inventory name field not available in current data source.

► Region / Country

▼ Landform

✓ rock glacier

✓ uncertain rock glacier

✓ not rock glacier

▼ Outlines

✓ Show AOI

✓ extended

✓ restricted

▼ MA velocity class

✓ Show Moving areas

✓ 1: < 1 cm/yr

✓ 2: 1-3 cm/yr

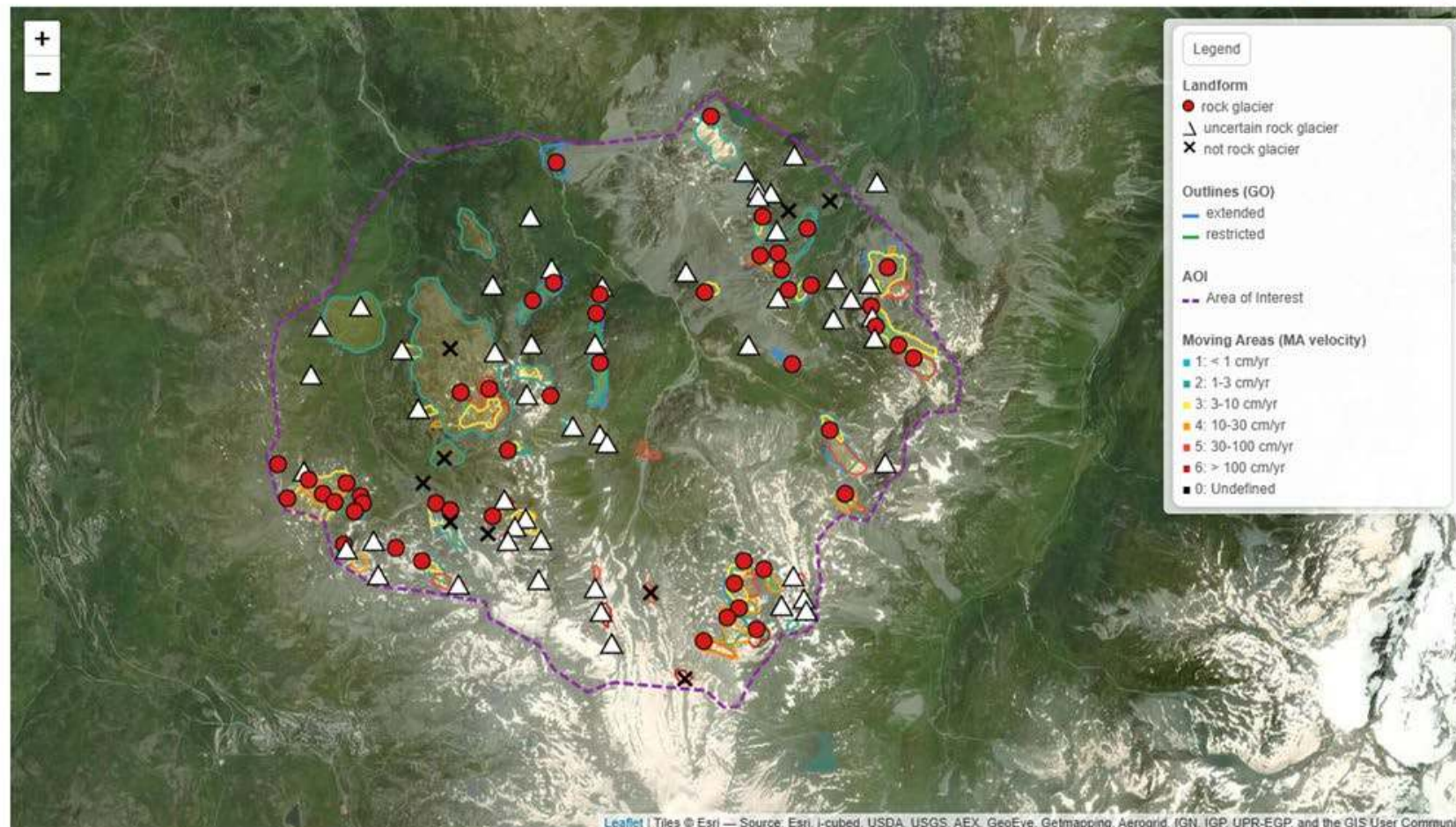
✓ 3: 3-10 cm/yr

✓ 4: 10-30 cm/yr

✓ 5: 30-100 cm/yr

✓ 6: > 100 cm/yr

✓ 0: Undefined



Show attribute table: Primary markers

Show attribute table: Outlines

Show attribute table: Moving areas

Hide table

Export current table (CSV)

Download GPKG

Tip: click any row in the table to zoom to the object on the map.

Attribute table: Outlines

Show 10 entries

Search:

Region / Country

Landform

✓ rock glacier

✓ uncertain rock glacier

✓ not rock glacier

Outlines

✓ Show AOI

✓ extended

✓ restricted

MA velocity class

✓ Show Moving areas

✓ 1: < 1 cm/yr

✓ 2: 1-3 cm/yr

✓ 3: 3-10 cm/yr

✓ 4: 10-30 cm/yr

✓ 5: 30-100 cm/yr

✓ 6: > 100 cm/yr

✓ 0: Undefined

Activity class

1. Active

2. Active uncertain

3. Transitional

4. Relict uncertain

5. Relict

6. Uncertain

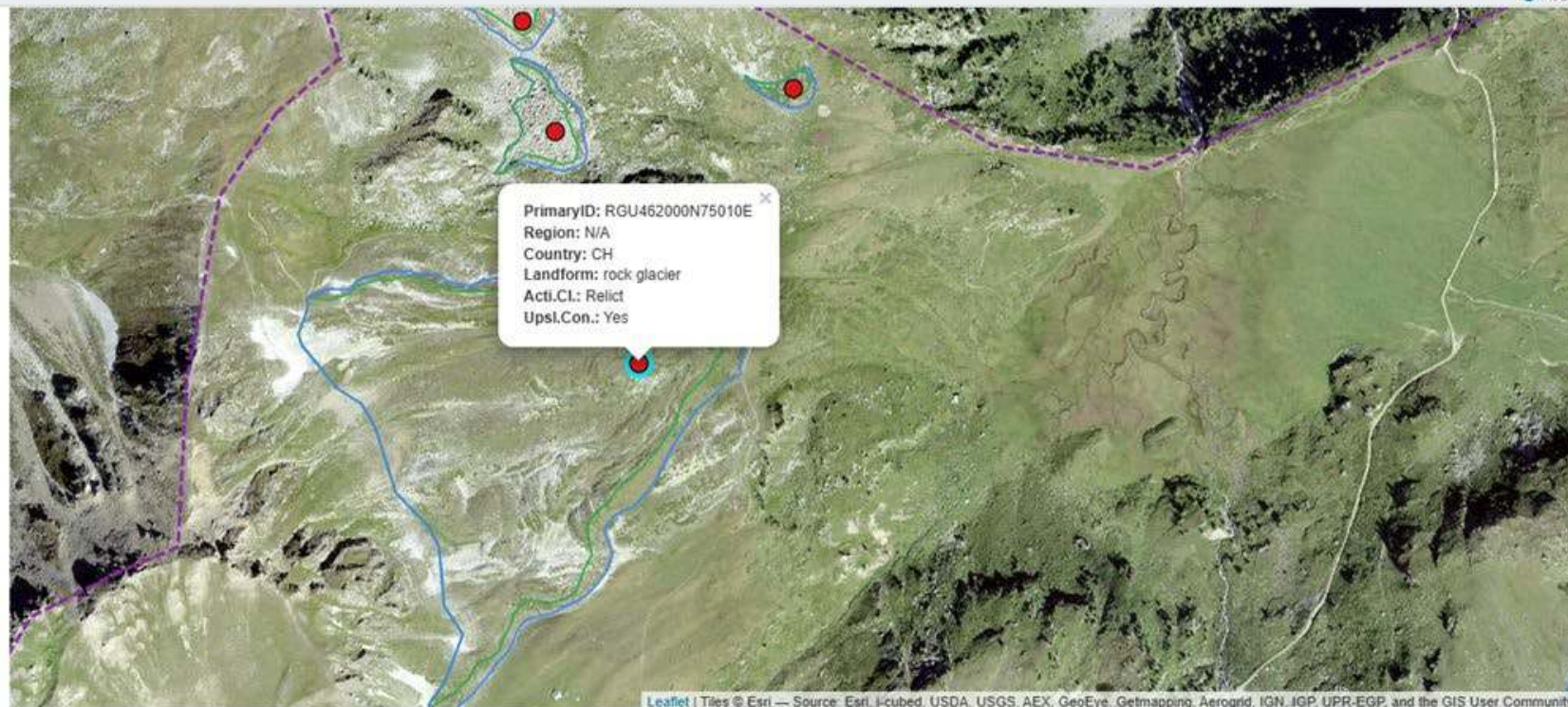
Upslope connection (Upsl.Cur)

1. Yes

2. No

3. Uncertain

4. Unknown



Show attribute table: Primary markers

Show attribute table: Outlines

Show attribute table: Moving areas

Hide table

Export current table (CSV)

Download GPKG

Tip: click any row in the table to zoom to the object on the map.

Attribute table: Primary markers

Show 10 entries

Search: RGU462000N75010E

fid	Landform	workingid	lat	long	PrimaryID	alterid1	alterid2	assocrgs	rgsprimar	morpho	c
	All	All	All	All	All	/	/	All	All	A	
596	1	42	46.20005006932637	7.501662318655895	RGU462000N75010E			Mono-unit RGS		Complex	1

Showing 1 to 1 of 1 entries (filtered from 1,008 total entries)

Previous 1 Next

3) RGIK Working Group – RGV

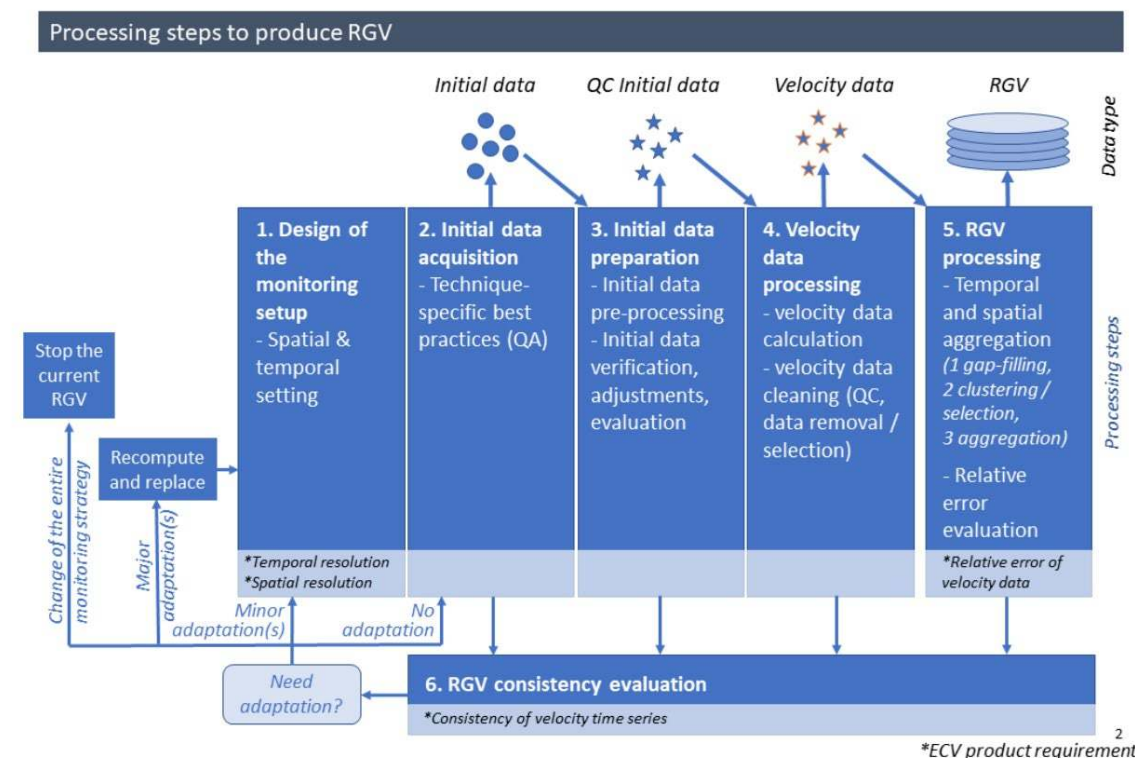


What is RGV?

- Rock Glacier Velocity (RGV) is a **time series of annualized surface velocity values** expressed in m/y and measured/computed on a rock glacier unit or a part of it.
- RGV is an **Essential Climate Variable Quantity for Permafrost**.

General goals of the RGV WG:

- Develop guidelines, best practice and processing tools for RGV production for a set of dedicated techniques (in-situ, optical RS, radar RS).
- Enhance the systematic production and data compilation of long-term velocity time series on rock glaciers, to be used as a climate change indicator.



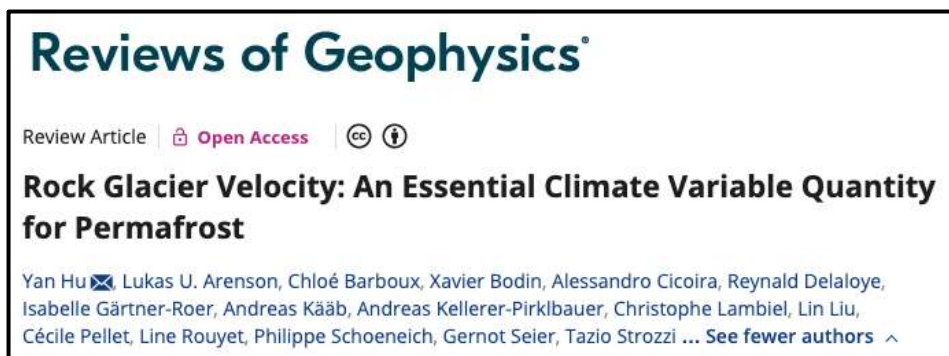
Processing steps to produce RGV from the RGV practical concepts
(RGV Practical concepts - RGIK, 2023)

3) RGIK Working Group – RGV



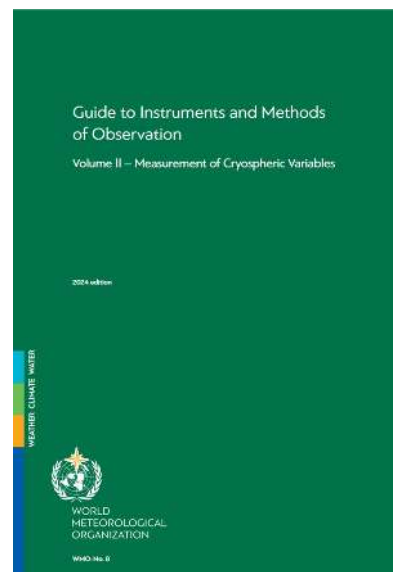
Key documents:

RGV ECV review paper:



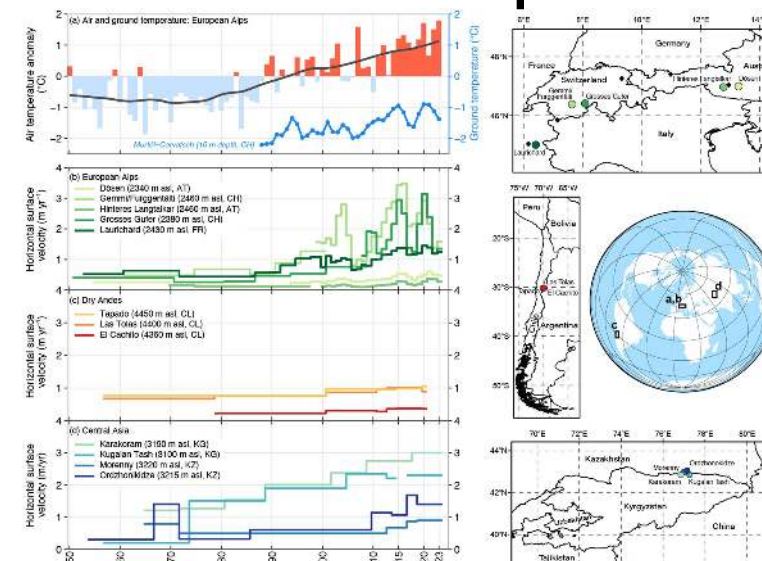
Hu, Y. et al. (2025). **Rock glacier velocity: An essential climate variable quantity for permafrost.** *Reviews of Geophysics*, 63, e2024RG000847.
<https://doi.org/10.1029/2024RG000847>.

WMO Guide:



WMO (2024). **Guide to Instruments and Methods of Observation (WMO-No. 8). Volume II.**

BAMS annual chapter:



Pellet et al. (2025), **Rock Glacier Velocity.** In *State of Climate 2024* (Vol. 106, p. 48-49).
<https://doi.org/10.1175/BAMS-D-25-0102.1>.

3) RGIK Working Group – RGV

- First Workshop in November 2024: discussing results of an intercomparison exercise for RGV production. 19 participants (16 people on site).



- Second Workshop in December 2025: further drafting RGV technical guidelines (in-situ, optical RS, radar RS). 22 participants (17 people on site).



3) RGIK Working Group – RGV

2026: RGV guidelines finalisation

- Finalise the **Best Practice documents for the 3 techniques**
- **Adjust** the generic RGV guidelines and **merge** them with technical Best Practice
- Open a **community review** of the complete/merged RGV guidelines

2027: From guidelines to production

- Final guideline adjustment and approval (similar process as for RoGI guidelines)
- Spread the adjustments to related docs (GCOS/GTN-P ECV requ. / WMO guidelines)
- Promotion of the guidelines to **enhance the production**
- **Database development**, in dialogue with GTN-P
- **Larger compilation of RGV and further use as climate change indicator**

3) RGIK Suggested Priorities 2026 onwards



- **Wrapping up the development and release of key standards, guidelines and tools**
 - **Outcomes:** RoGI alternative training tools; RGV technical recommendations; Update of GCOS/GTN-P RGV ECV requirements; RoGI/RGV database development.
- **Main objectives of the next term:** Enhance the systematic **production** of RG standardised data. Launch the **operational phase**, focusing on the **concrete applications** of the standards.
 - **Outcomes:** RoGI/RGV database release; RGV/RoGI production and compilation; Systematic use and interpretation for mountain permafrost assessment of state and evolution.
- **Network development and communication:**
 - Continue regular monthly **webinars**, with special series targeting **early-career skill development**.
 - Set up **regional working groups** with contact persons and expert panels, for national/continental promotion, conference representations and support to user uptake.
 - Organise a **large RGIK workshop in 2027**, focusing on **1)** promoting the main achievements to new users, **2)** enhancing the actual data production and compilation.