Reddet av overvåking: Varsling og evakuering i forkant av 2025 Blatten-skredet - Sveits

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Skredlæring 2026 | Teknostallen, Trondheim | 19. October 2026 | 10:20-10:35



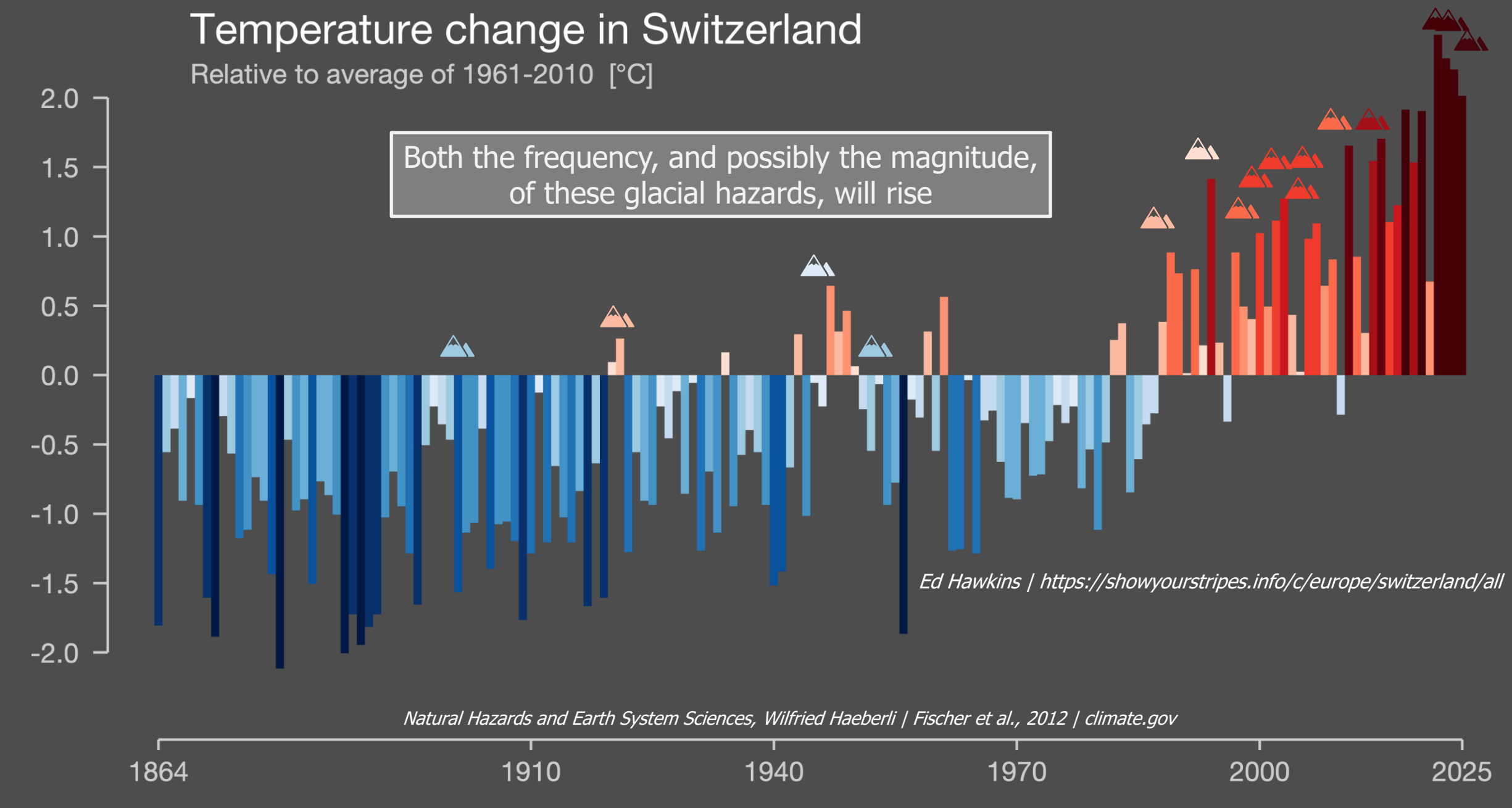
Rita Bellwald
André Albrecht

Overview

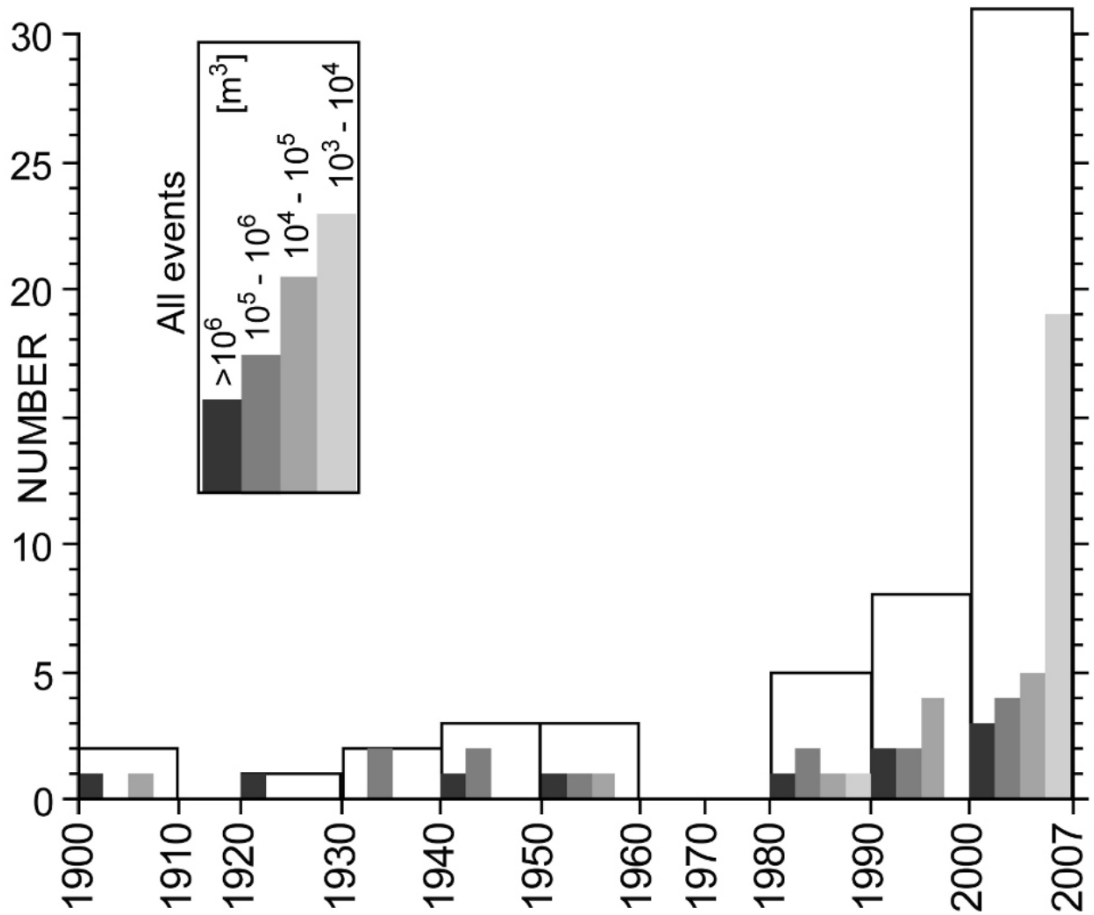
1. Mass-movement frequency in the Alps
2. Blatten
3. The cascades
4. Monitoring and mitigation
5. Conclusions

1. Frequency

Correlation between rock avalanches and climate change (V>1,000,000 m³)



Frequency of slope instabilities | Alps



Fischer et al., 2012



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2. Blatten

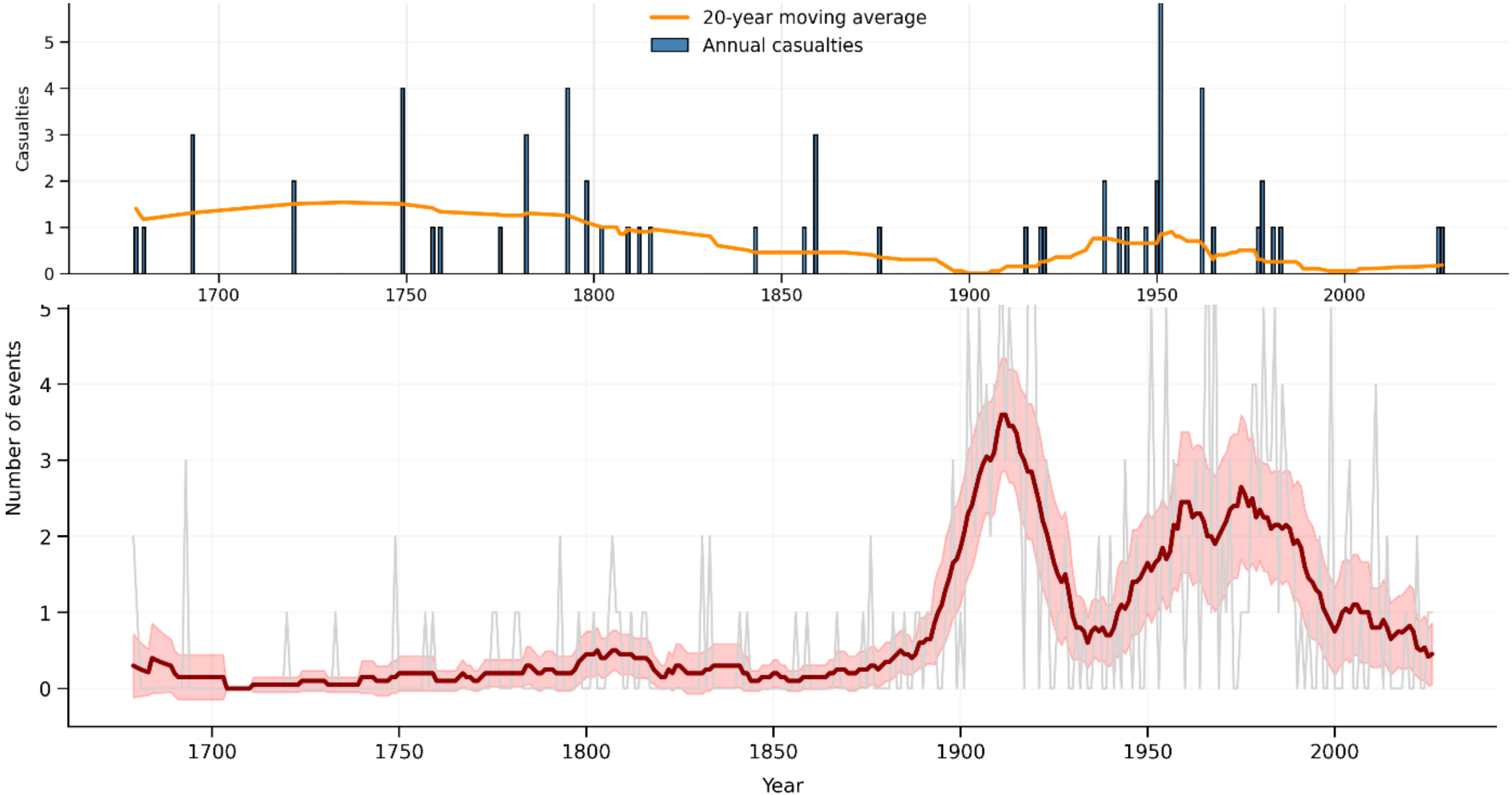
Dorfkern Blatten



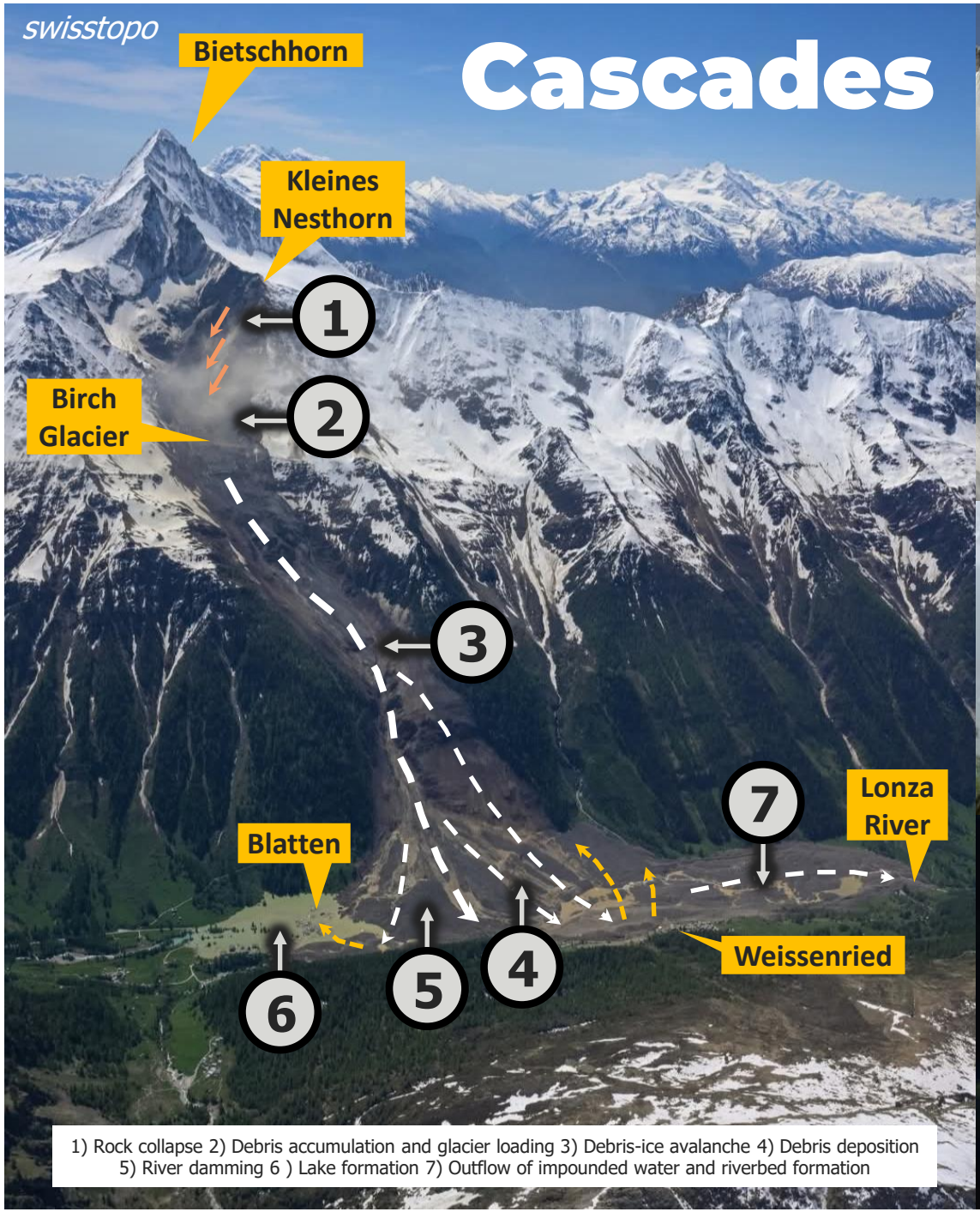
Altitude:	1540 m asl
Inhabitants:	303 (in 2023)
Attractions:	UNESCO World Heritage Jungfrau-Aletsch, church, old village, cementary
Origin:	1433 AD (parchment)

Historic events Lötschental

Bellwald et al. (in prep.)



3. Cascades



1) Rock collapse 2) Debris accumulation and glacier loading 3) Debris-ice avalanche 4) Debris deposition 5) River damming 6) Lake formation 7) Outflow of impounded water and riverbed formation











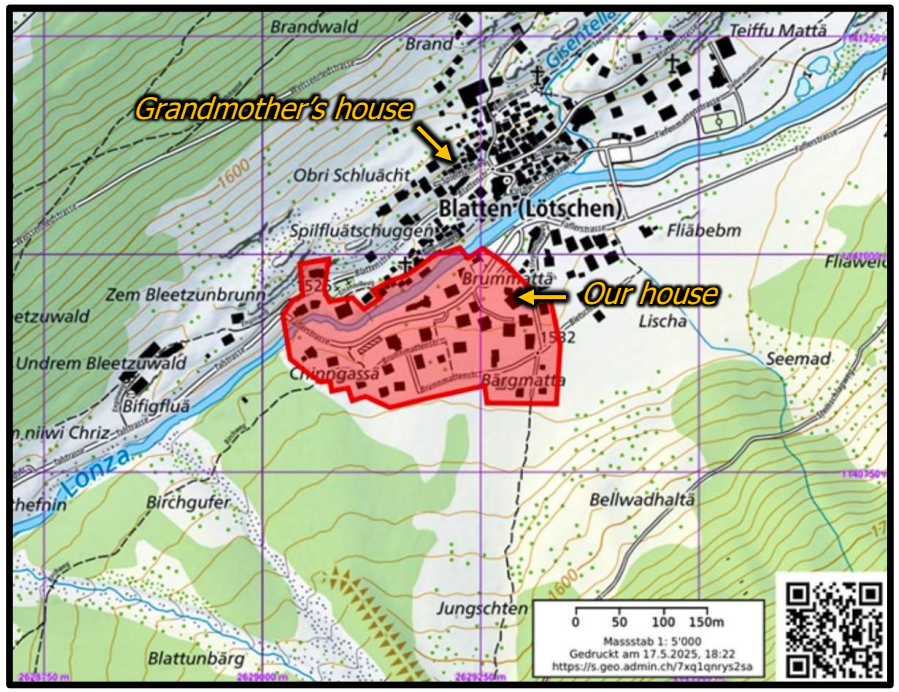


Bellwald et al. (in prep.)

Evacuation of Blatten (during rock falls)

First evacuation | Part of the village
Saturday, 17. May 2025. c. 7:00-09:30 pm.
>92 residents, 16 tourists

Second evacuation | Complete village
Monday, 19. May 2025. 9:39-10:00 am.
'Möglichst das Nötigste packen und sofort die Häuser räumen!'
All residents and tourists of Blatten-Ried (not Eisten-Weissenried)



20minuten.ch



Agnes Bellwald

Rock collapse

Funk et al. (in prep.)

SRF

Rock collapse

Debris accumulation and glacier loading





Quelle: pomona.media

Ice-flow acceleration



Monitoring

Some glaciers show signs when they are about to collapse — thousands of lives can be saved under the right circumstances

Funk et al. (in prep.)

pomona.media



Hope


Benedict Jaggy


SRF


SRF


NRK

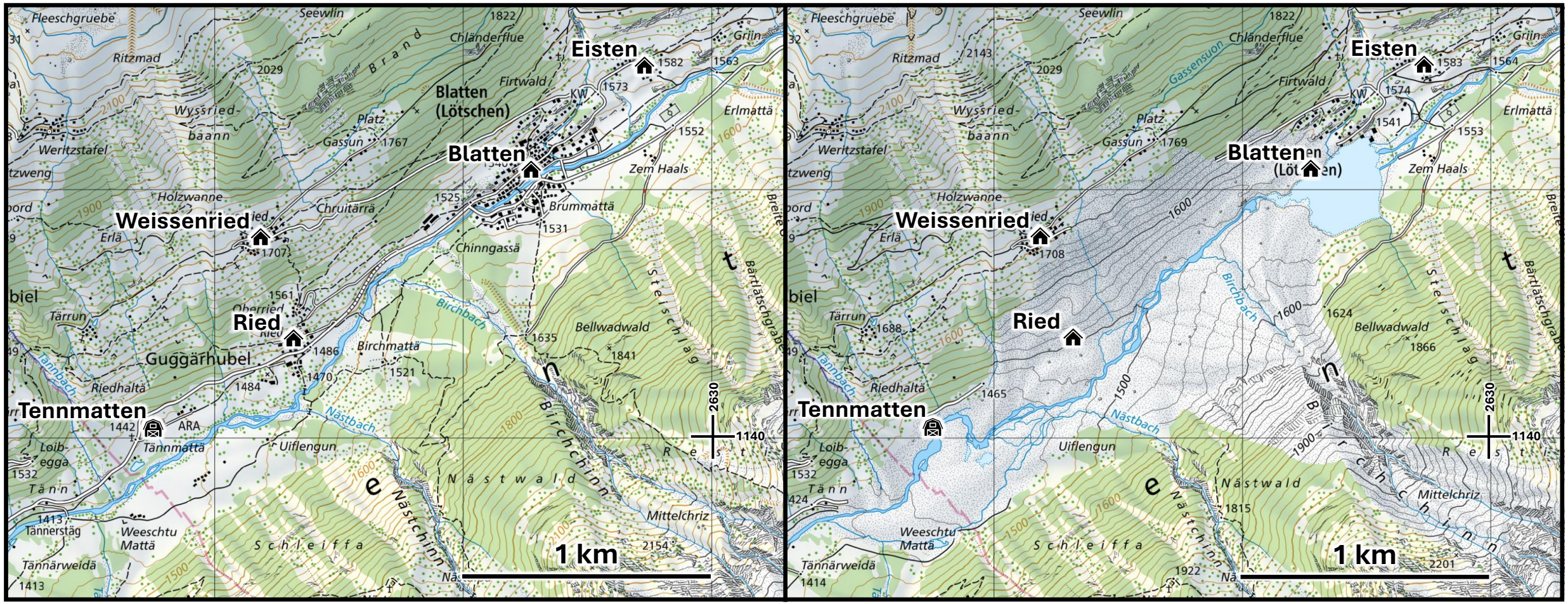
First photograph



Anonymous

Blatten before and after 28 May 2025

Bellwald et al. (in prep.)



Village and smaller residences

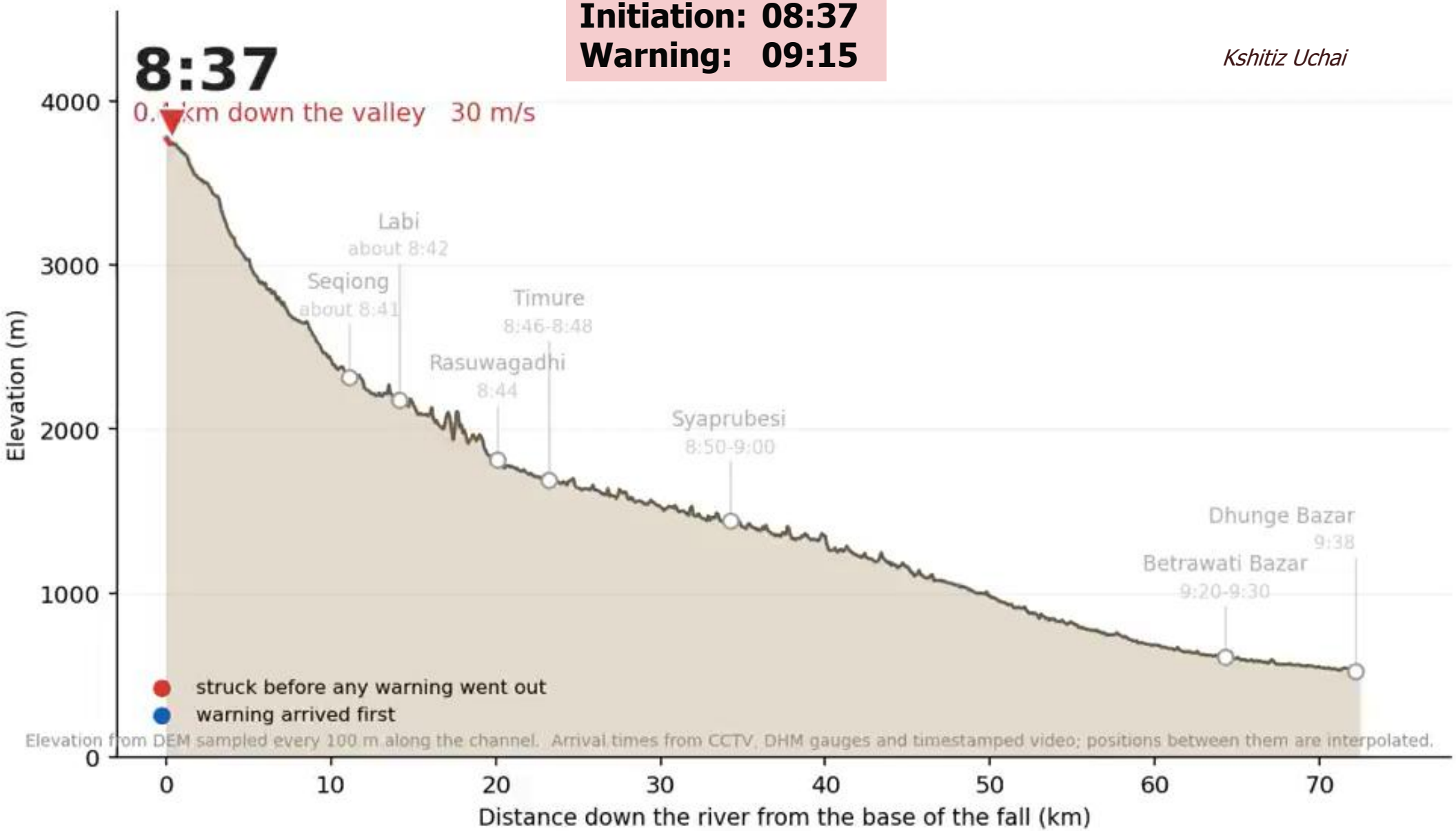
Sheep shelter

4. Mitigation and Monitoring

Delayed mitigation measures in Nepal

Initiation: 08:37
Warning: 09:15

Kshitiz Uchai



GEOPREVENT

PTZ: Pan-Tilt-Zoom camera
PROCam: Deformation camera system
GNSS: Global Navigation Satellite System

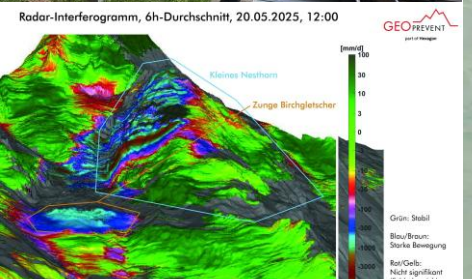
MONITORING

PROCam Birchgletscher



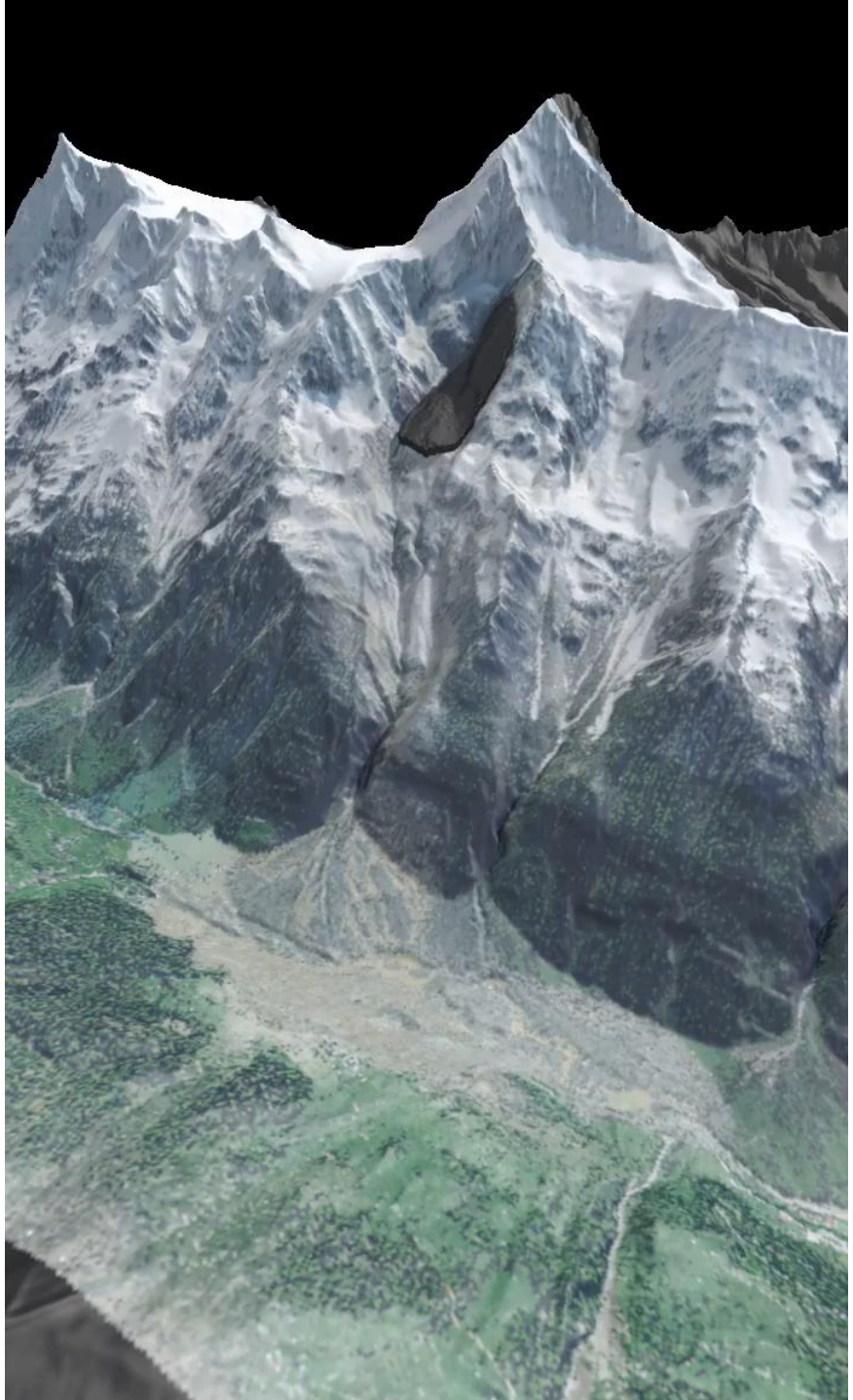
Interferometric radar





Schinhorn
Breithorn
Breitlauihorn
Bietschhorn
Kleines Nesthorn
PTZ Schafbärg
Birchgletscher
GNSS sensors
Nestgletscher
PROCam Birchgletscher
PROCam Nestgletscher
Bietschhorn hut
Interferometric radar
Blatten (Lötschen)
PTZ Birchbach

The models



Parameters

- Event duration: c. 105 s
- Acceleration 4x
- Event duration based on seismic data



Swisstopo, Glamos, Geoformer, Tagesanzeiger

Johan Gaume

Hope vs. Reality



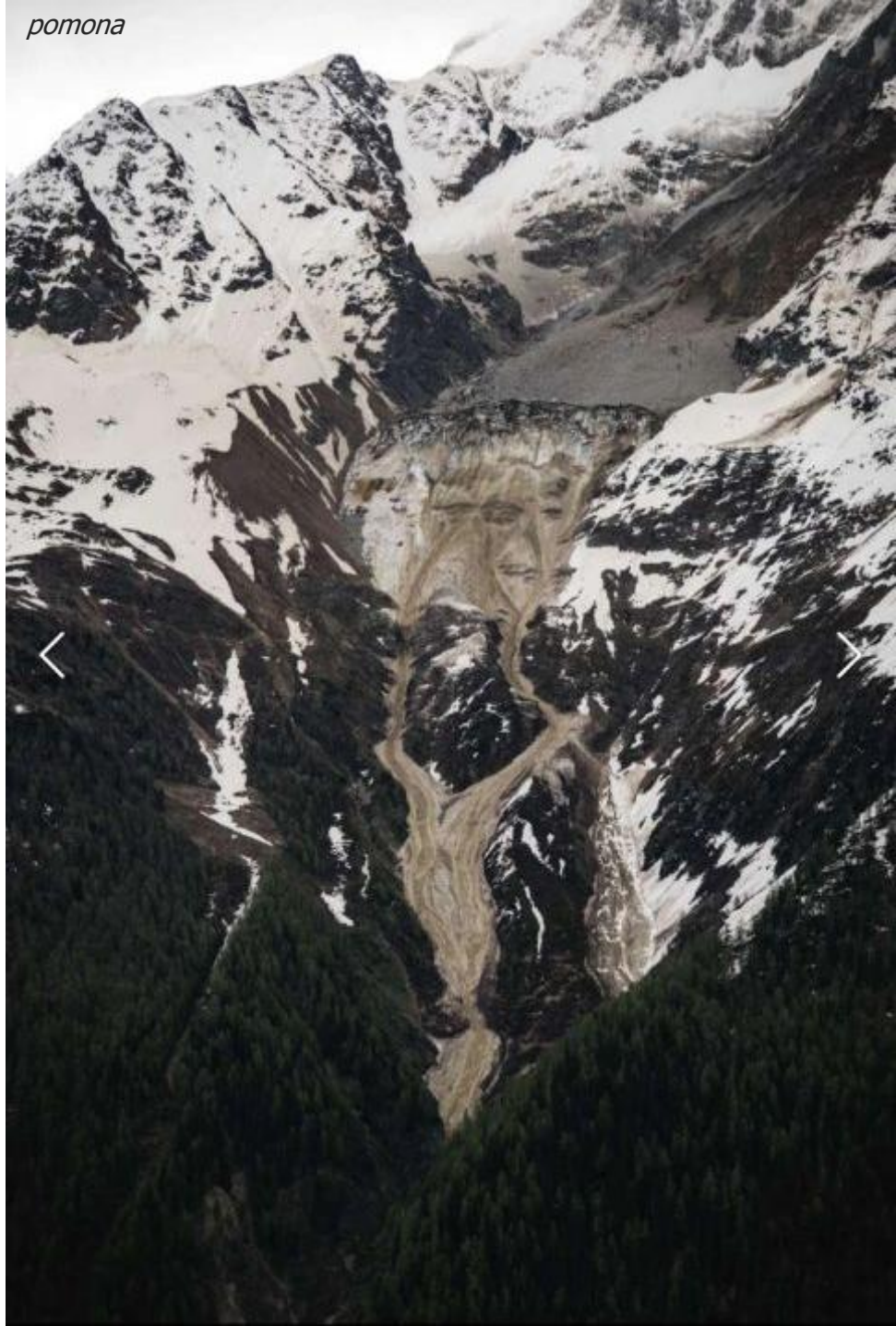
Matthias Bellwald, Major of Blatten [28 May 2025]: *"...We lost our village today, but not our heart. Even if Blatten is covered by meters of debris; we know where Blatten is located in the innermost valley, where we will rebuild the church and our houses..."*



Hope

5. (Some) Conclusions

- "Best **documented** natural disaster ever"
- "**Unprecedented** for the Swiss Alps both in terms of the dynamics of collapse and its devastating impacts"
- **In-time mitigation measures**
- 303 residents of Blatten and some 10s of tourists (low season) could get **evacuated** in time due to **ongoing monitoring**; 1 resident of Wiler died
- Things can happen on **whatever probability**
- **Communication by local authorities** resulted in a **smooth evacuation** (and likely in a successful Blatten 2.0)
- **Support** was/is **overwhelming**
- **Frequency and magnitude of rock-ice avalanche events likely to increase in future**



Danke



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On safe ground