



ÖBRD Report on accident from 27.08.2017

- **Location: Mount Gabler in the Zillertal Alps in Salzburg (Austria)**
- **Area: Glacier**
- **Conditions: Ice**
- **Accident Result: 6 fatalities**



Martin Gurdet
Austrian Mountain Rescue Service
martin.gurdet@bergrettung.at
Mobile: +43 664 8101365

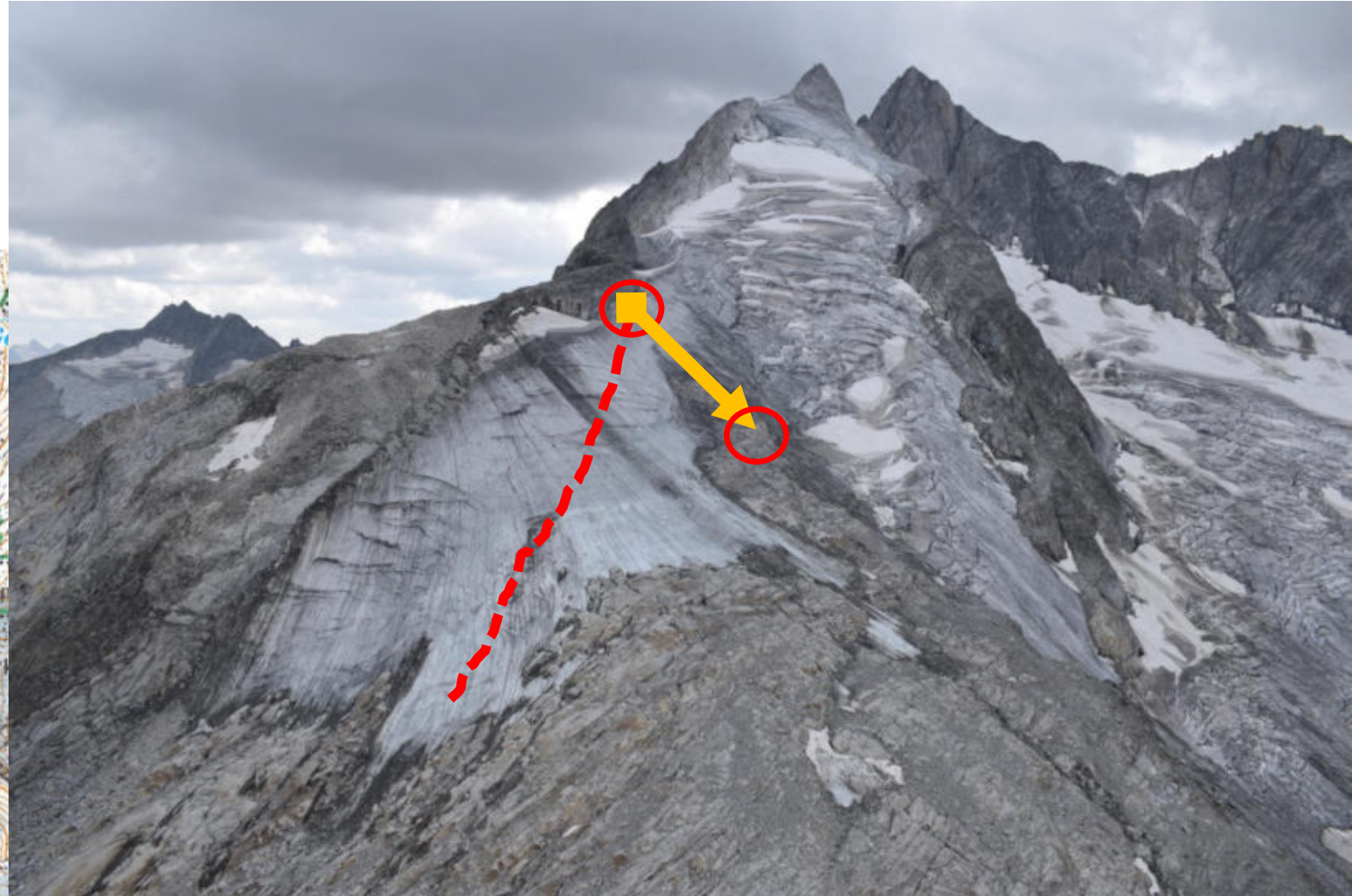


Accident Location - Salzburg



Die Aufstiegslinie von kurz vor dem Materialaufzug., Foto: Axel Jentsch-Rabl

Map & Aerial View



Accident sequence

- Route: Zittauer Hütte (2329m) → Gabler (3263m)
- The group had formed a rope team while climbing on a sloped glacier.
- Height of accident: approx.: 3,000 meters (9,842 feet).
- The group was reportedly about to give up the climb as one of the climbers felt the slope was too risky.
- One member of the company, slipped and pulled the others with him.
- The mountaineers plunged some 200 meters down the hillside.



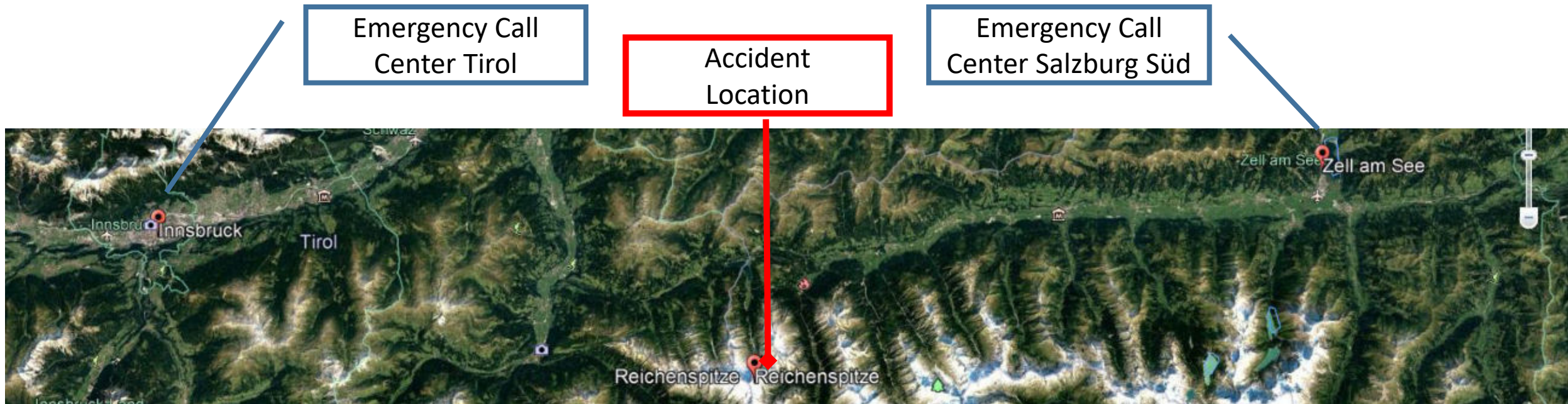
Picture short before accident; taken by a close by group



Example Picture

Rescue Operation @ 27.08.2017

10:06 am a Emergency call was received by the Emergency Call Center Tirol (nearby county boarder) and immediately handed over to the geographical in charge Emergency Call Center Salzburg South (Zell am See)



Rescue Operation @ 27.08.2017

- Following rescue units were tasked to the scene:
 - Police (Manpower with special training and Helicopter)
 - Austrian Mountain Rescue (Unit Krimml)
 - 5 Rescue Helicopters
 - Martin 4
 - Martin 6
 - Alpin 6
 - C4
 - C6



Within less than one hour the victim with major polytrauma was hospitalized

Situation at Scene



Situation at Scene



Situation at Scene - Crash Line





Crash Line



Final Victim Location





5 victims died immediately on scene

1 victim died later at the hospital



Context to global warming – ICAR Main Topic

ZAMG – Video Pasterze Nov 2015 – August 2017

<https://www.youtube.com/watch?v=5a0ztROZBeQ&feature=youtu.be>

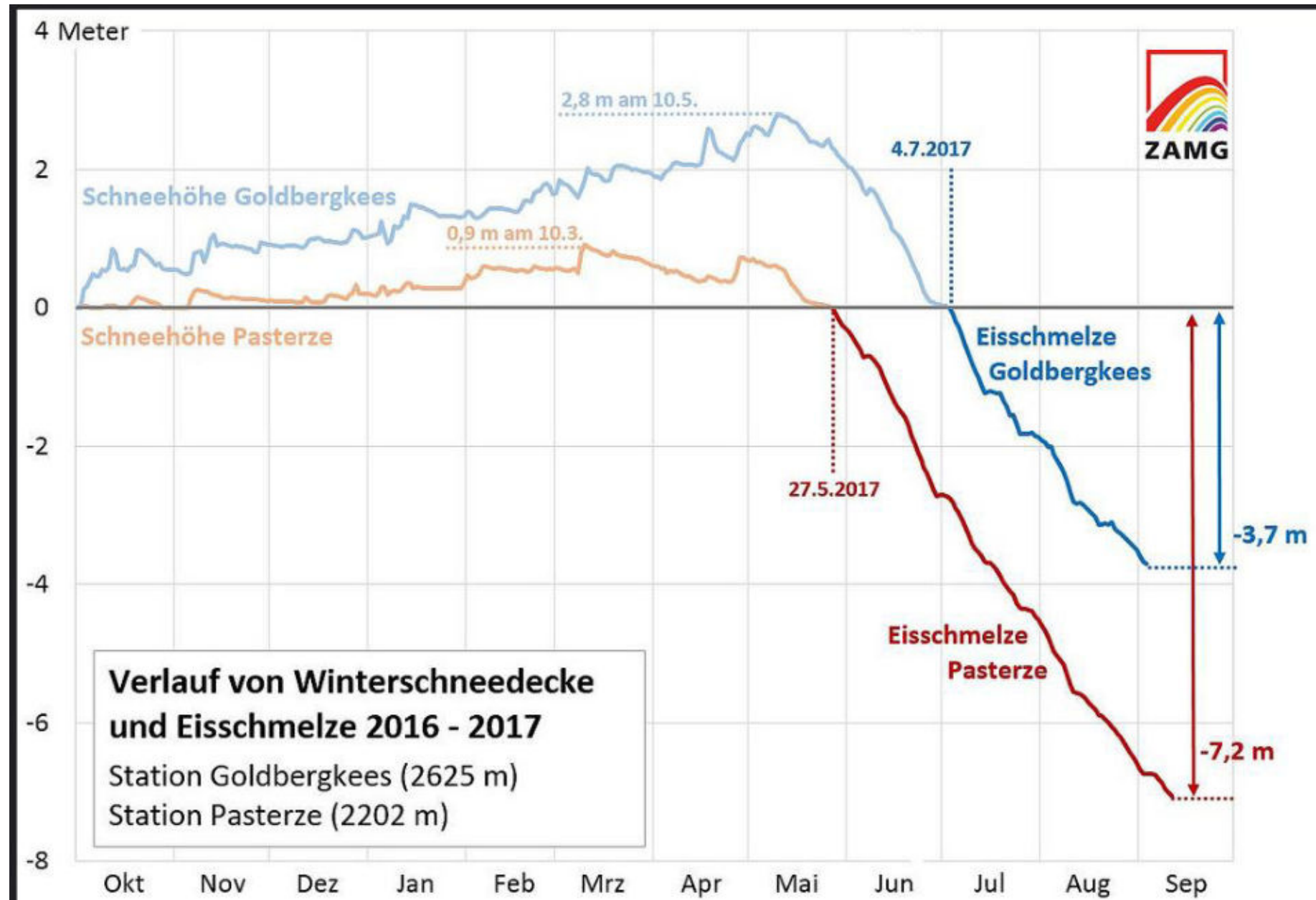




ZAMG – Datas (Central Institute for Meteorology and Geodynamics)

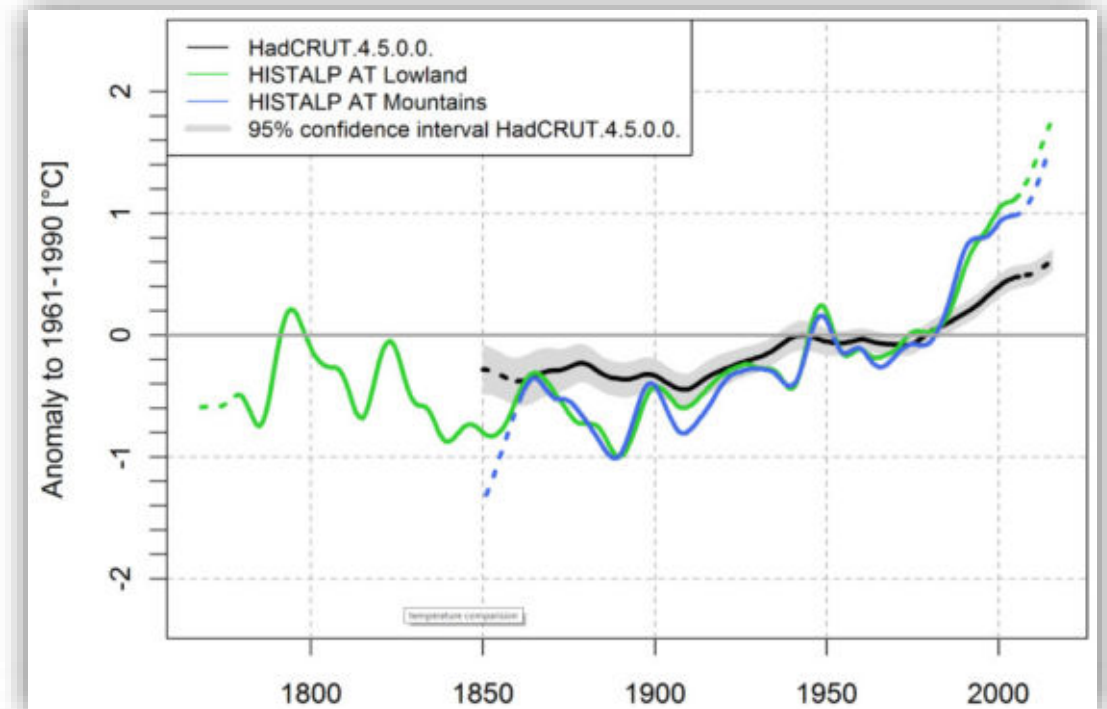
- 2017 was a bad year for the Austrian Glaciers. The ZAMG is surveying regularly the Austrian Glaciers and concluded that at Hohe Tauern there was about 10 % less snow at the end of the winter season and an extreme high melt during the summer period.
- The survey station at Goldbergkees (2625m, Salzburg) **measured 2,8 m snowfall** during winter, which did melt away till 4. July. In the following month additional **3,7 meter of ice did melt** away.
- The survey station at Pasterze (Grossglockner) measured approx. **1 m of snowfall** during winter, which did melt away till 27. Mai. Till mid of september additional **7,2 meter of ice did melt** away (altitude 2200m).

ZAMG Graph



ZAMG - Historical Instrumental Climatological Surface Time Series Of The Greater Alpine Region

- As stated in the **Austrian Assessment Report 2014** (Volume 1, Chapter 3, Auer I., Foelsche U.) , the **regional temperature time serie of Austria shows a higher short term variability than the global time series.**
- This is due to the different climate anomalies and climate trends that reduce each other when averaged.
- The negative anomaly during 1870-1900 and the **strong postive anomaly during the last three decades** lead to a stronger temperature increase for Austria than on the global scale.





Twice as high temperature increase in Austria

- Chart 1 (at the next slide) shows the global temperature development of the last 170 years.
 - The 2000 decade has a positive deviation of $+0,49^{\circ}\text{C}$ (compared to the average value of from 1961 – 1990) and is the so far hottest decade measured.
 - From 2001 to 2017 a temperature increase near groundlevel of $0,25^{\circ}\text{C}$ is recorded
- There are regional deviations for the world wide trend. Austria is among the most impacted regions concerning temperature increase, compared to the average global warming.
 - Main reason is that the land surfaces are more attractive to a quick heat up compared to the thermal very slow reacting oceans.
 - Another reason under discussion is the shift of the subtropical high pressure belt towards north.
- Example: At the Sonnblick (3100m) the atmosphere has a temperature increase of approx. 2°C , similar to the development in Vienna. (since the End of the 19th Century)

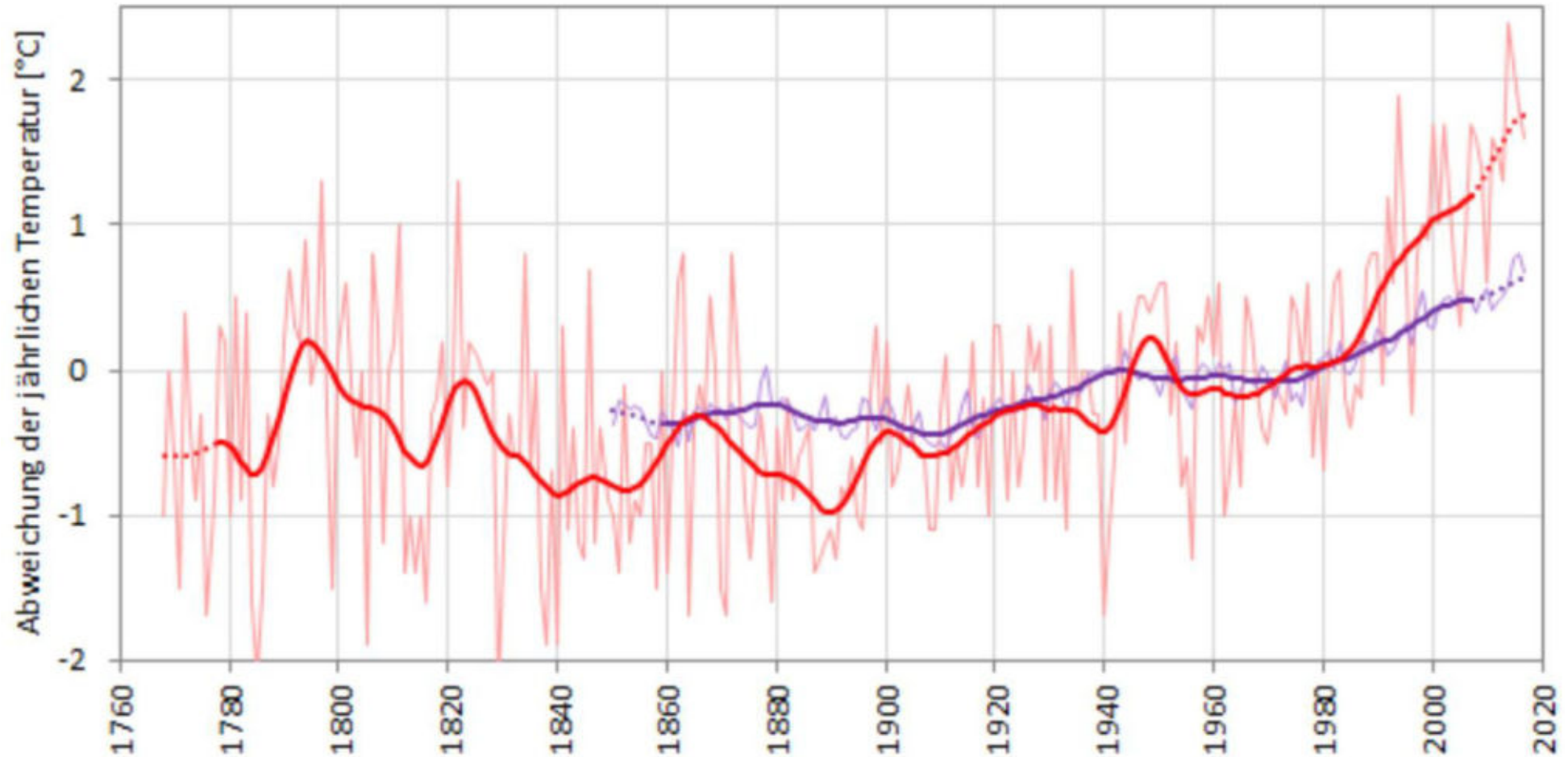


Abb. 1: Entwicklung der mittleren Jahrestemperatur weltweit 1850–2017 (violett) und in Österreich 1767–2017 (rot). Dargestellt sind jährliche Abweichungen vom Mittel der Jahre 1961–1990 (dünne Linien) und deren geglättete Trends (dicke Linien, 21-jähriger Gauß'scher Tiefpassfilter) (Morice u.a. 2012, Auer u.a. 2007).

Pictures from Wildgerloskees over time

27.07.2009



Picture: Josef Nussbaumer

Pictures from Wildgerloskees over time

1.8.2015



Picture: Josef Nussbaumer

Pictures from Wildgerloskees over time

13.8.2018





Conclusion

- Rescue operations due to slippery in high altitudes in particular on glaciers might happen more frequent in future. (less snow, more ice conditions)
- Rescue Teams will face a higher exposure to risk during approach and on scene of rescue operations as a consequence of higher temperatures / global warming.
- Particular Risks:
 - Danger due to rock fall, as more rocks become loos in general and during day warming
 - slippery of own rescue team members by working at difficult terrains (Glaciers, mountains with high loos rock content)



Thank you

This presentation was developed with assistance of:

- Austrian Police
- Christophorus Air Rescue
- ZAMG Zentral Anstalt für Meteorologie
- Austrian Mountain Rescue Service, Salzburg



BM.I - FLUGPOLIZEI



OAMTC | FLUGRETTUNG



ZAMG
Zentralanstalt für
Meteorologie und
Geodynamik

