

# La stabilité des glaciers

## Le cas des Grandes Jorasses



# Altels

1894



11 septembre 1895

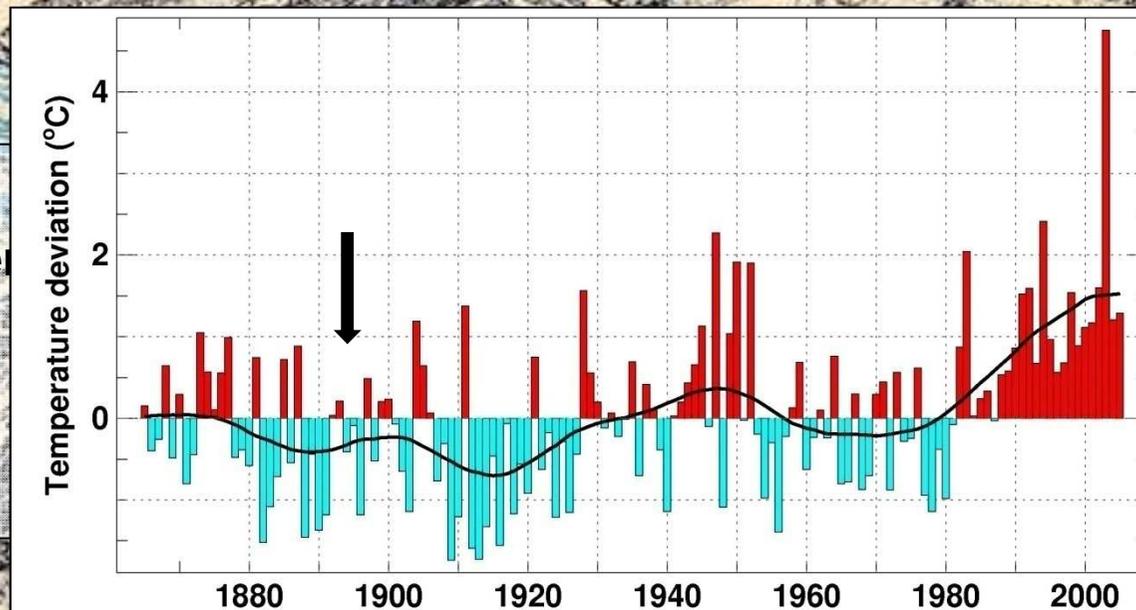


# Altels

En été 1782 un événement similaire s'était produit

Un glacier né sous une mauvaise étoile reste une menace

F.A. Forel (1895)



dass ein ge

ipfels

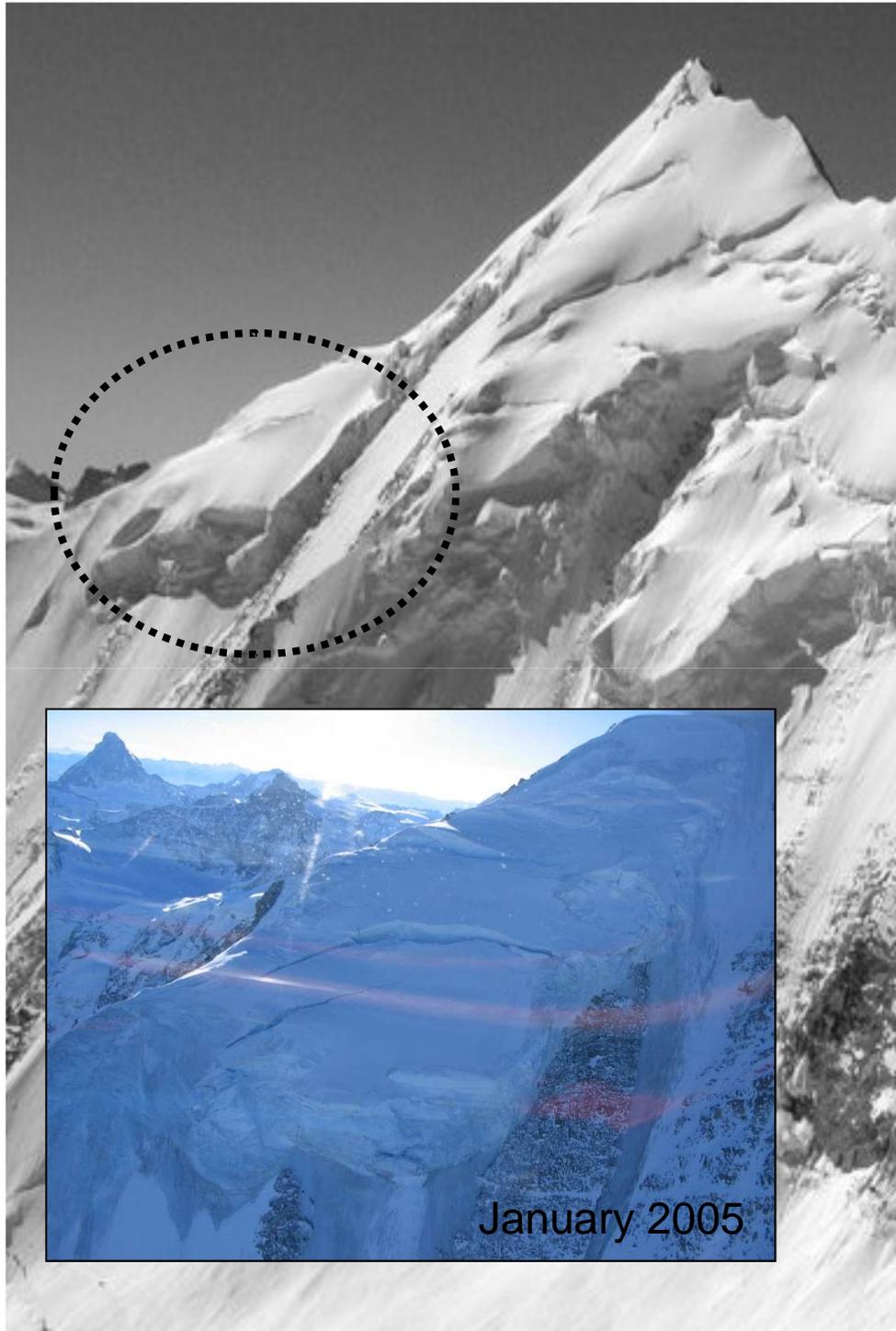
Q = Quellen

H = Hütentrümmer

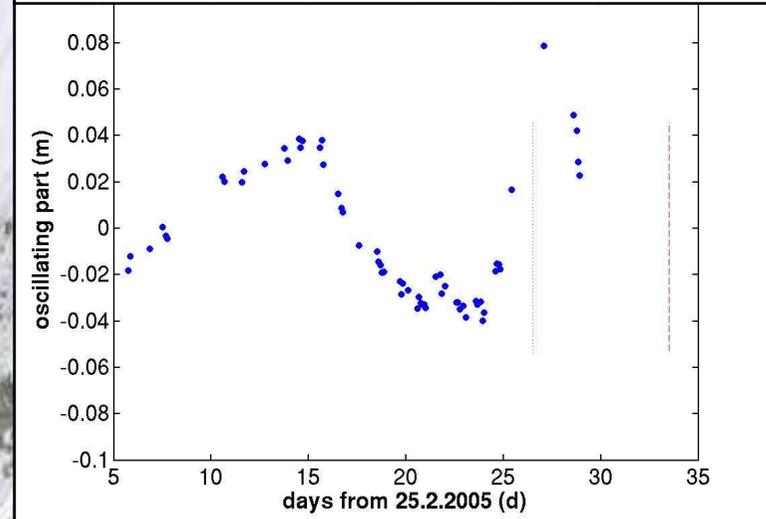
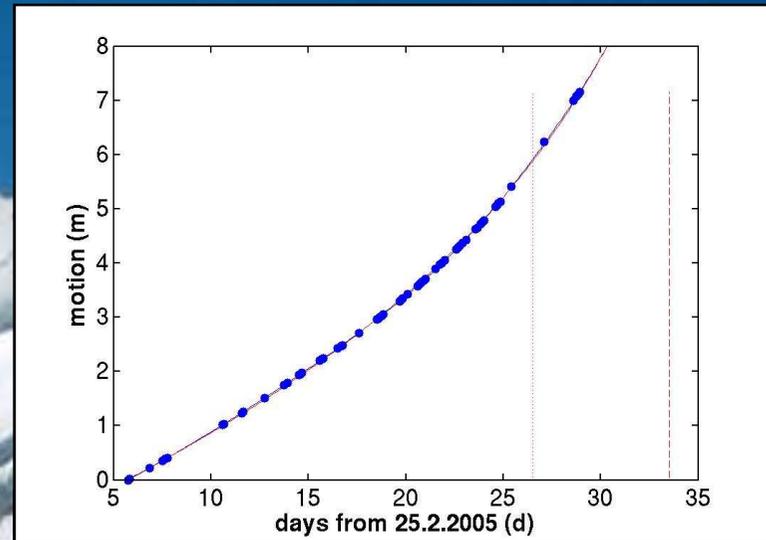
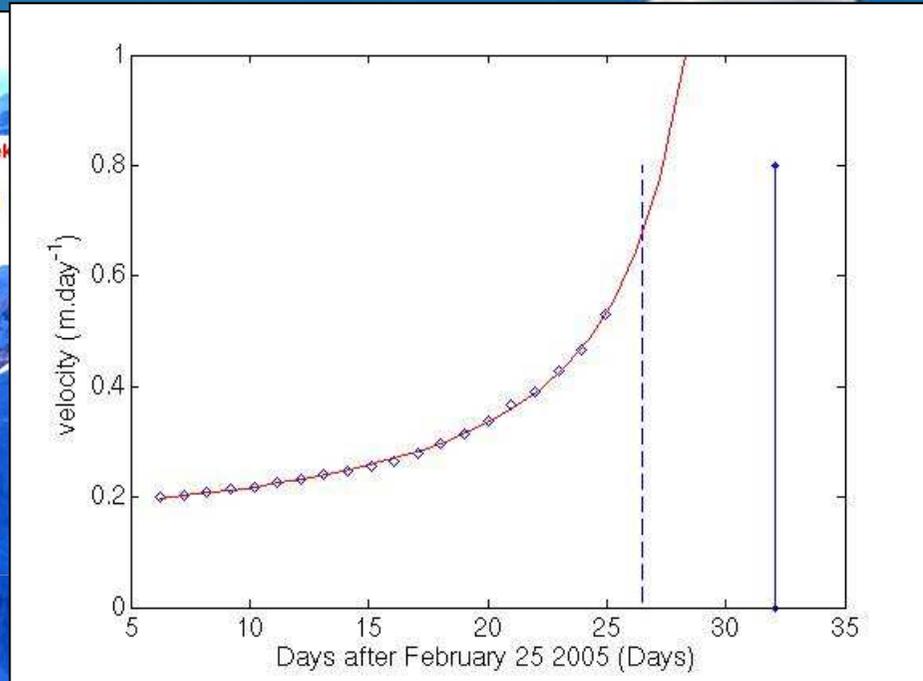
Kantonsgrenzstein

Gewo  
Sprit

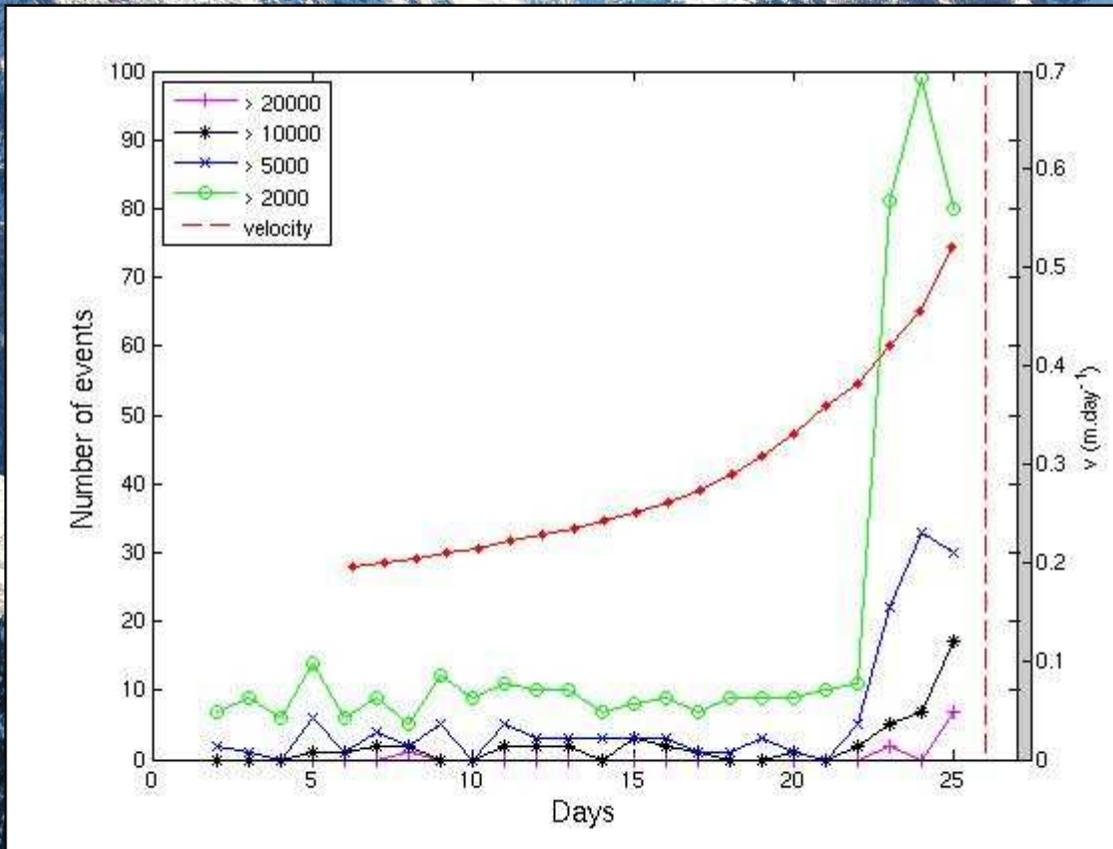
# Weisshorn



# Weisshorn 2005



$$u(t) = u_0 + a (t_f - t)^{-m} \cdot [1 + C \sin(\mathcal{F}(t_f - t))]$$

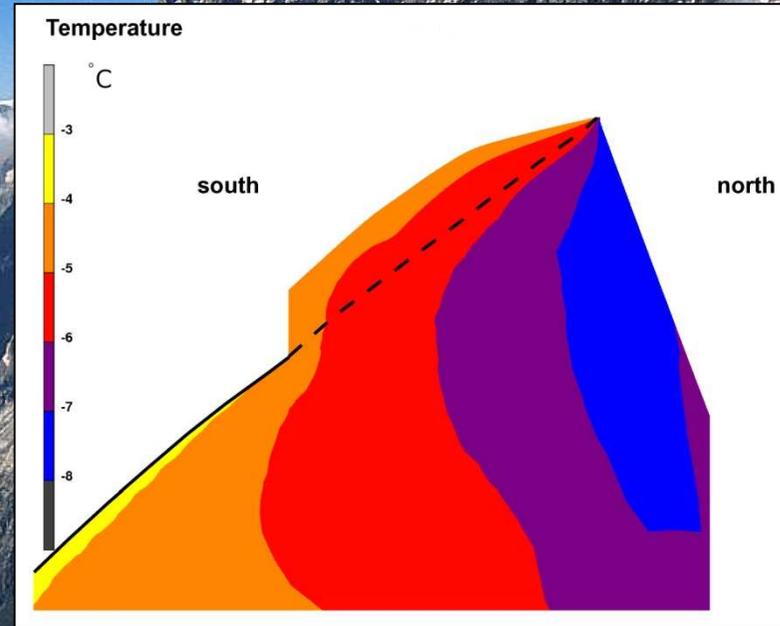


ometer

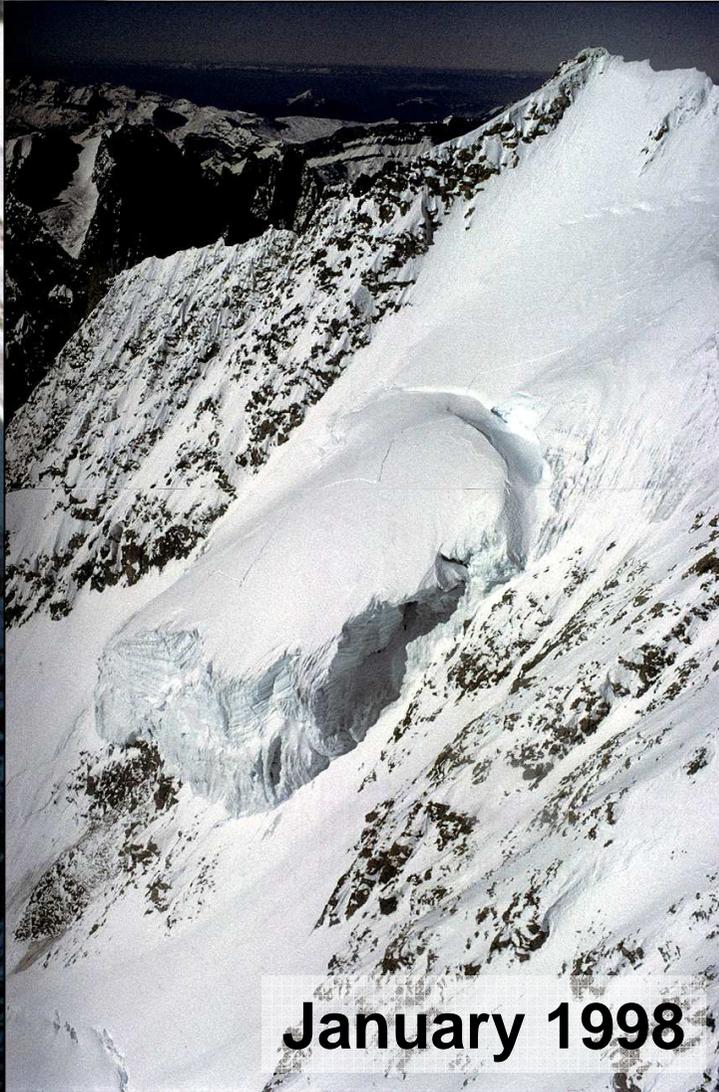
Future investigations

# Grandes Jorasses

January 1997



# Grandes Jorasses



January 1998



June 1998

u [cm/day]

0

# Grandes Jorasses

1.8.1993



4.5.1996



3.10.1996



24.9.1997



6.5.1998



30.5.1998



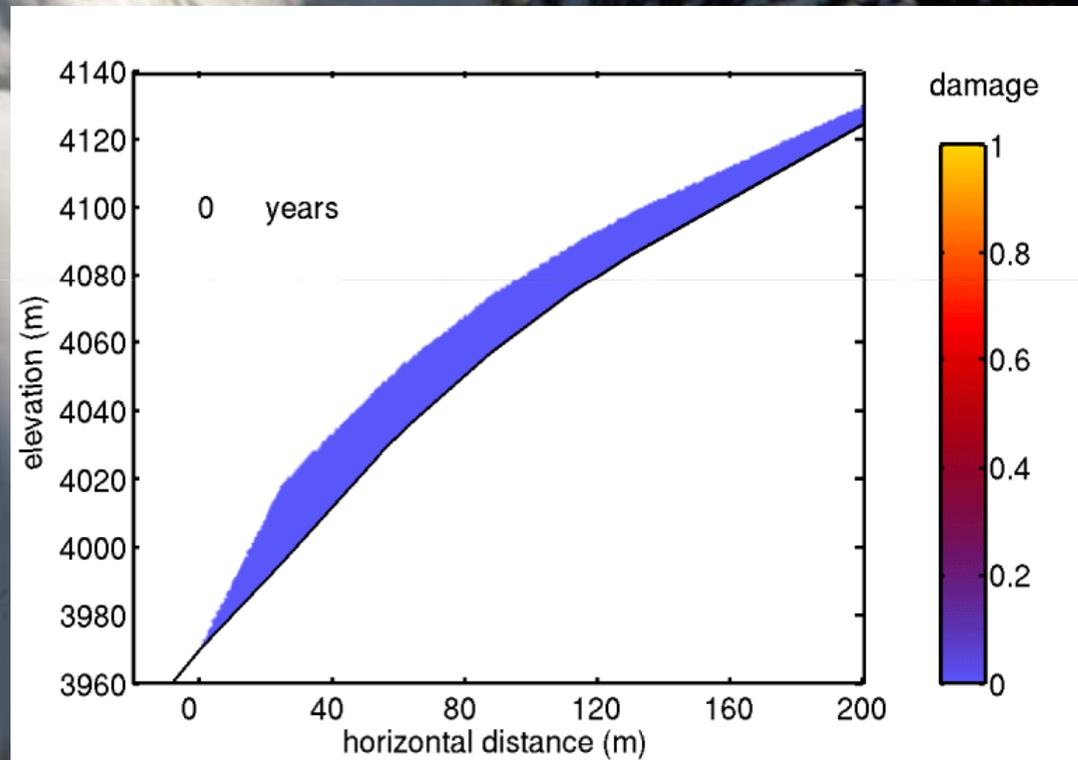
1.6.1998



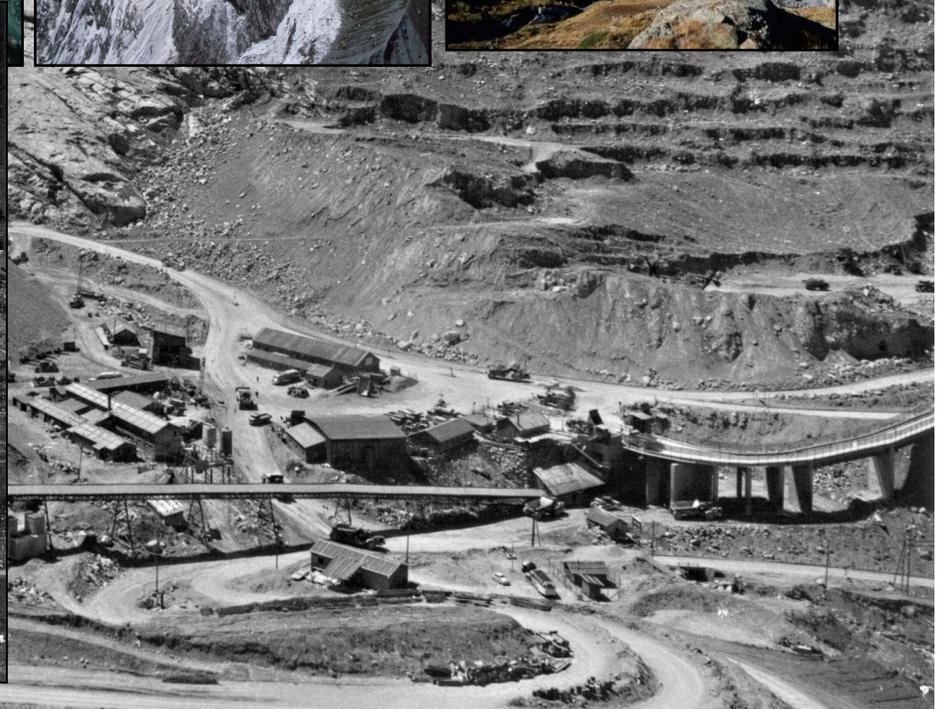
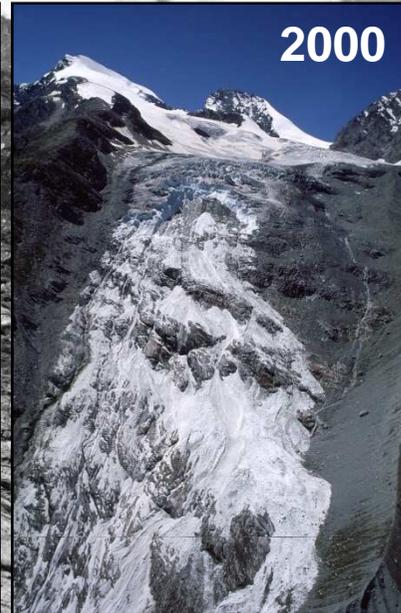
14.8.2009

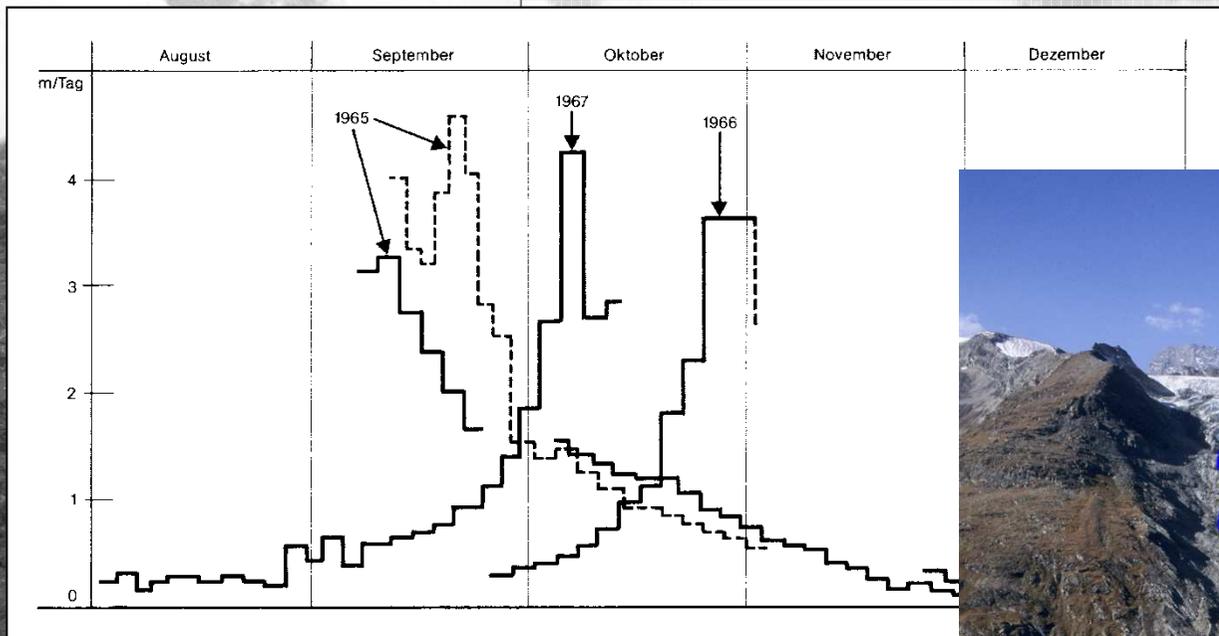


# Grandes Jorasses

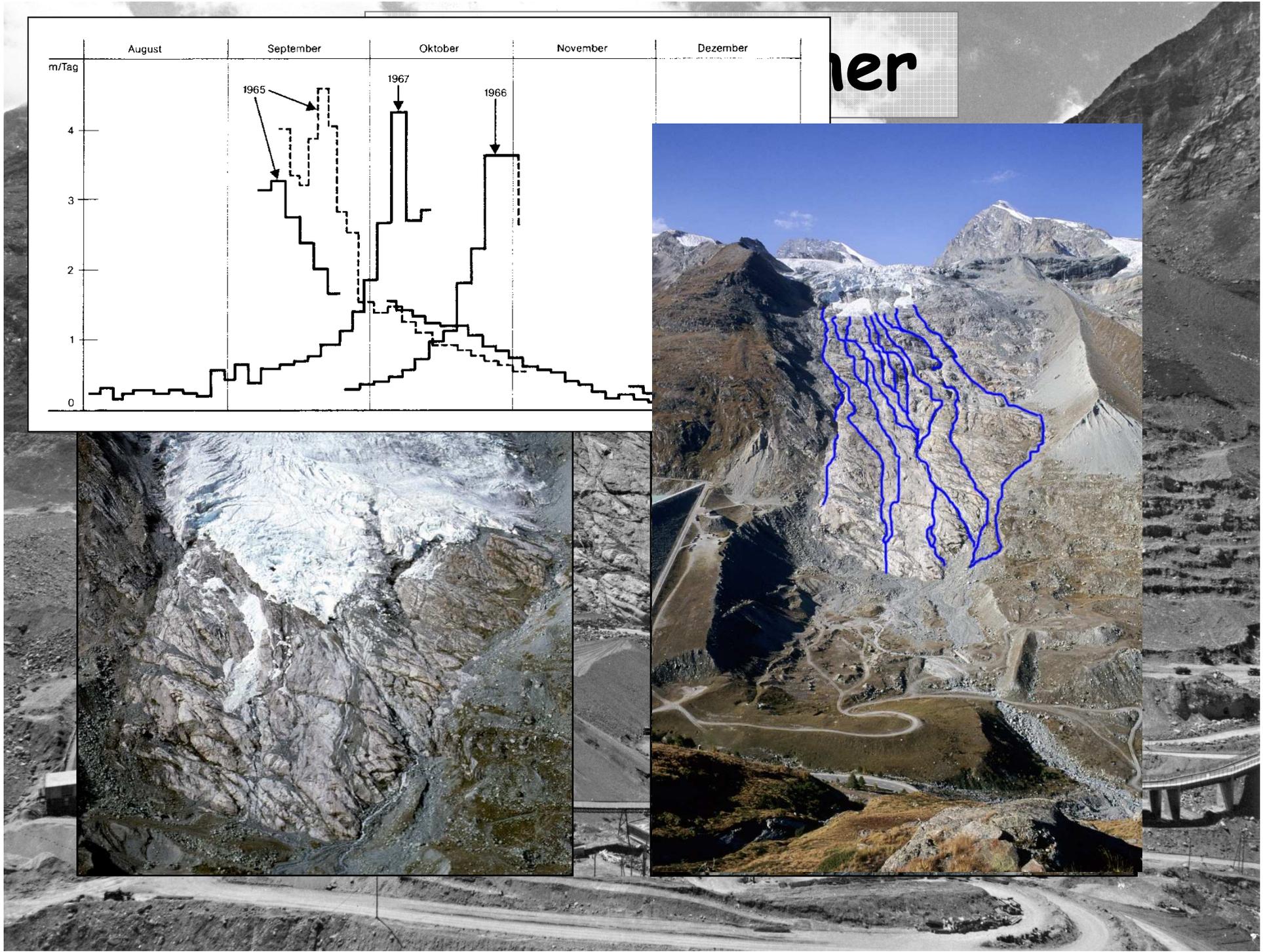


# Allalingletscher





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# Two types of instabilities



Type "Allalin"  
Sliding instability



Type "Weisshorn"  
Mechanical instability