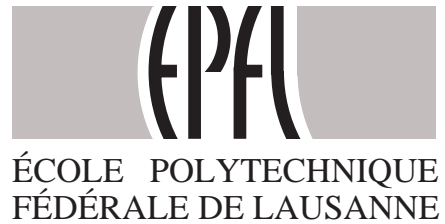


DÉPARTEMENT DE GÉNIE CIVIL  
LABORATOIRES DE MÉCANIQUE  
DES SOLS ET DES ROCHES



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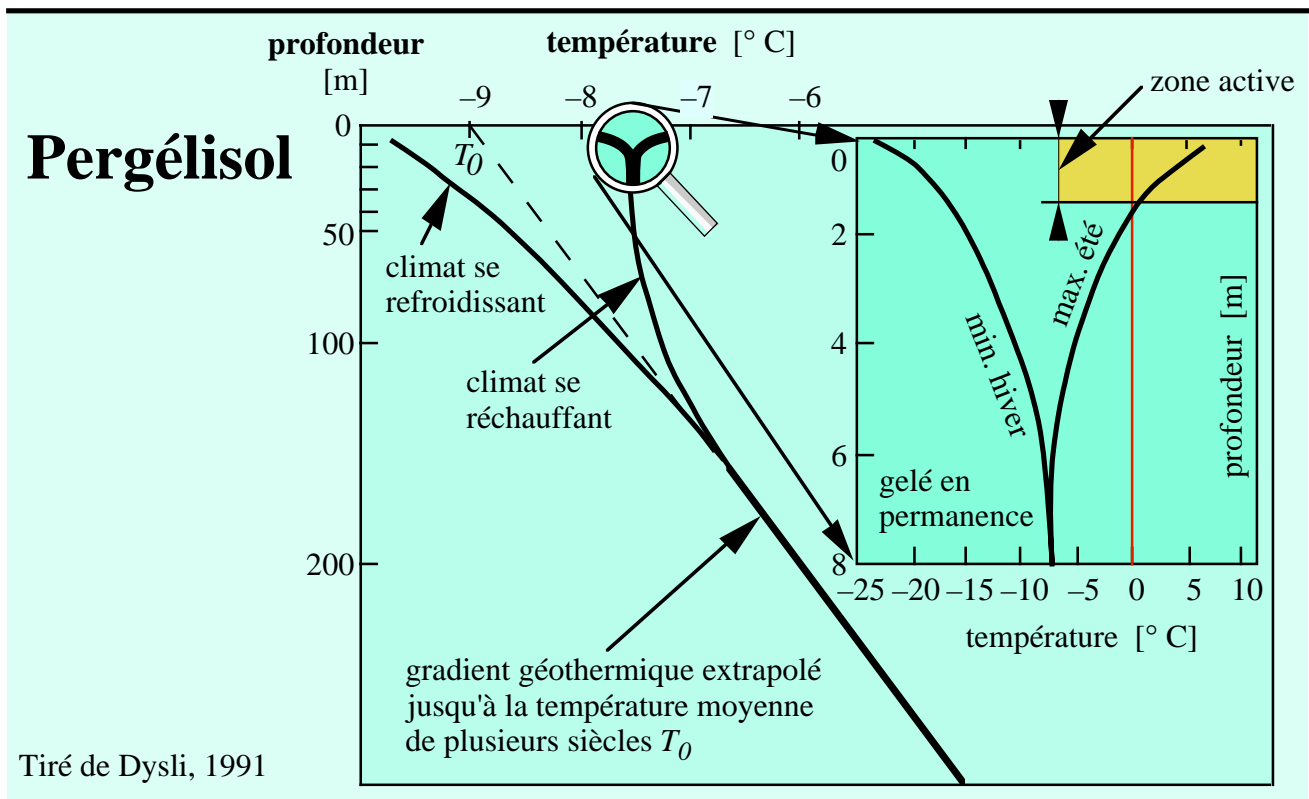
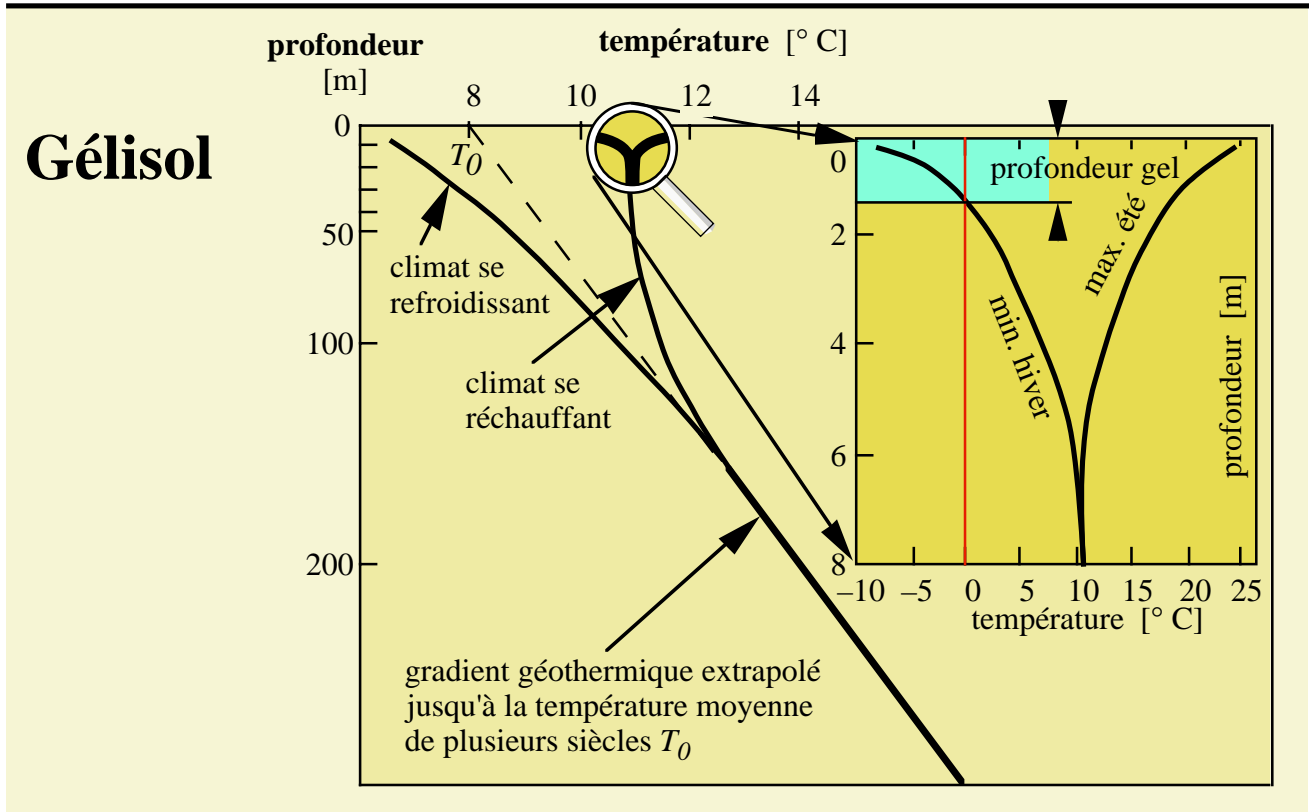
## Gel - pergélisol

# Problématique du gel

par M. Dysli

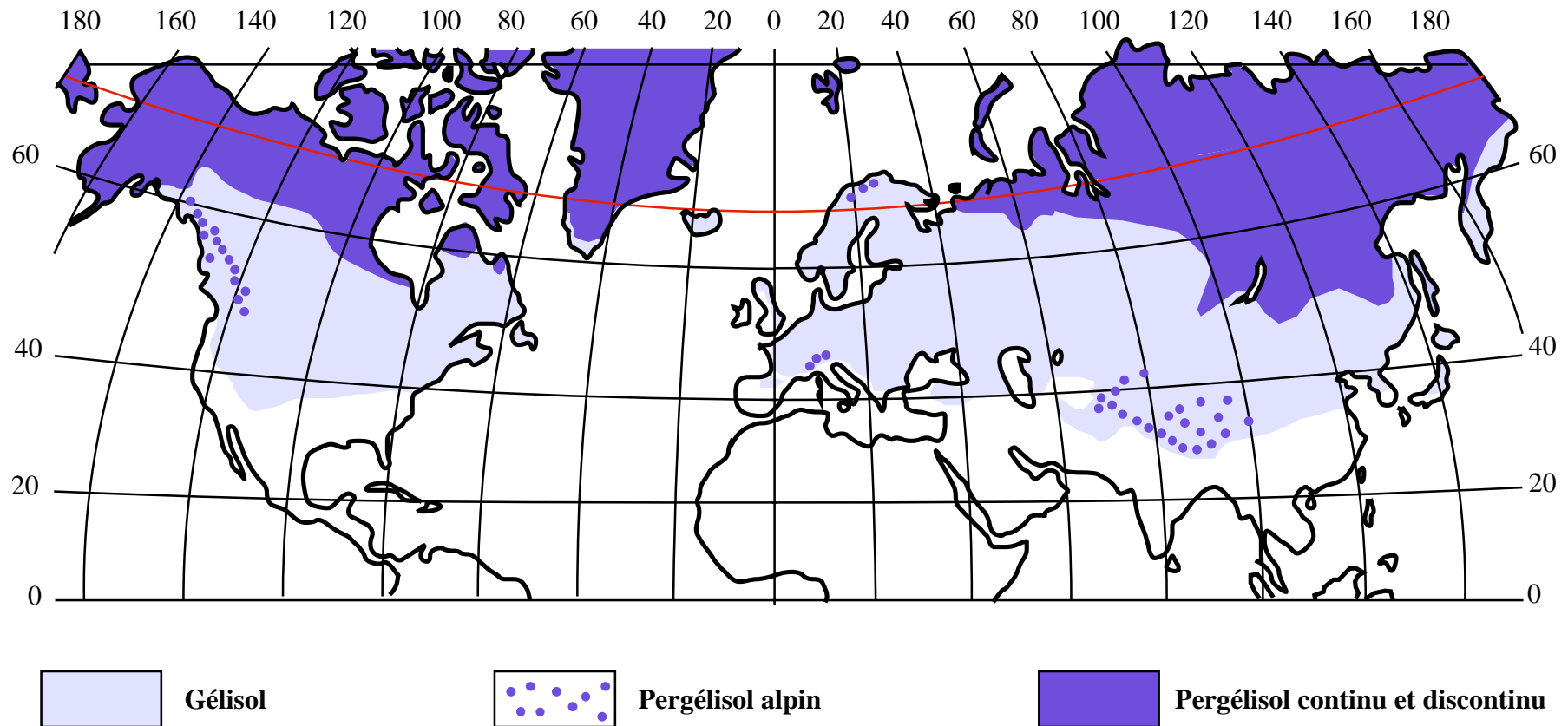
Transparents présentés

## Gélisol / Pergélisol



Tiré de Dysli, 1991

## Pergélisols et gélisols du nord du monde

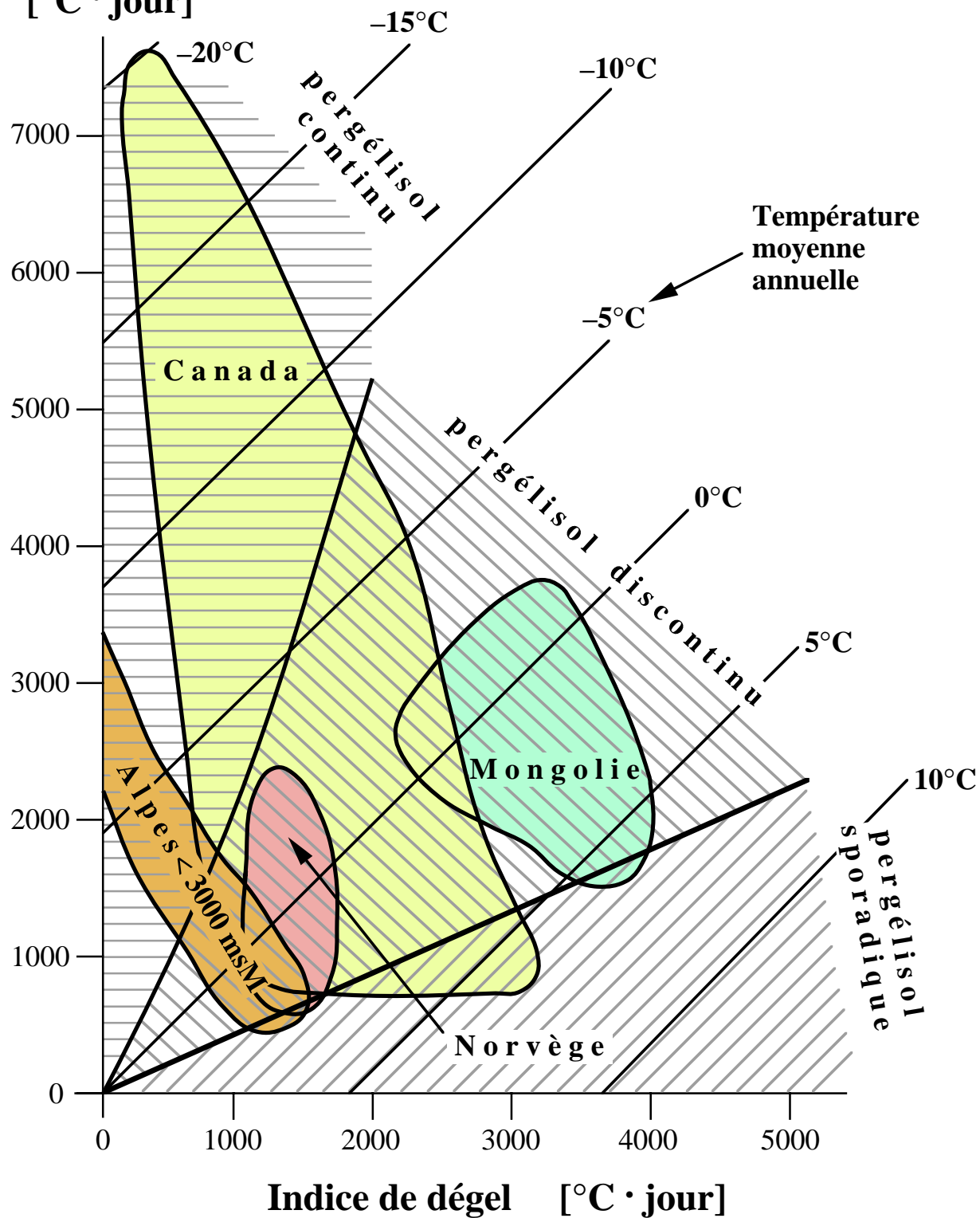


Tiré de Dysli, 1991

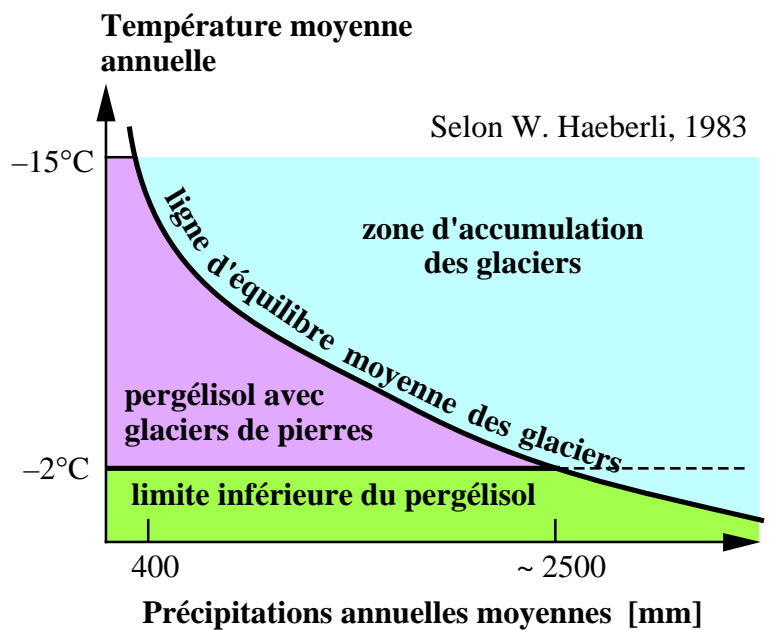
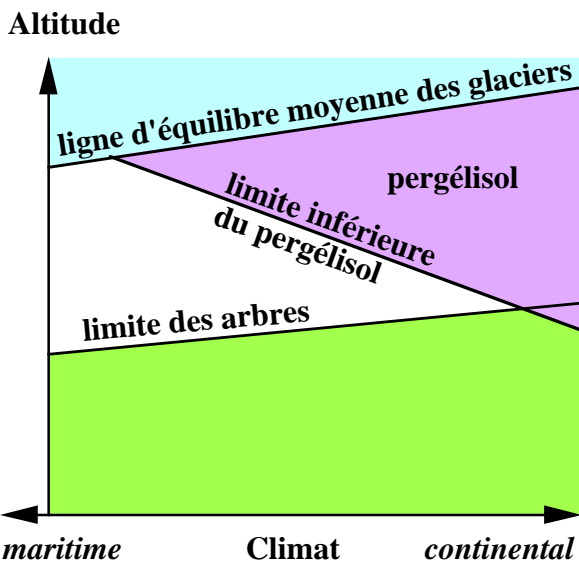
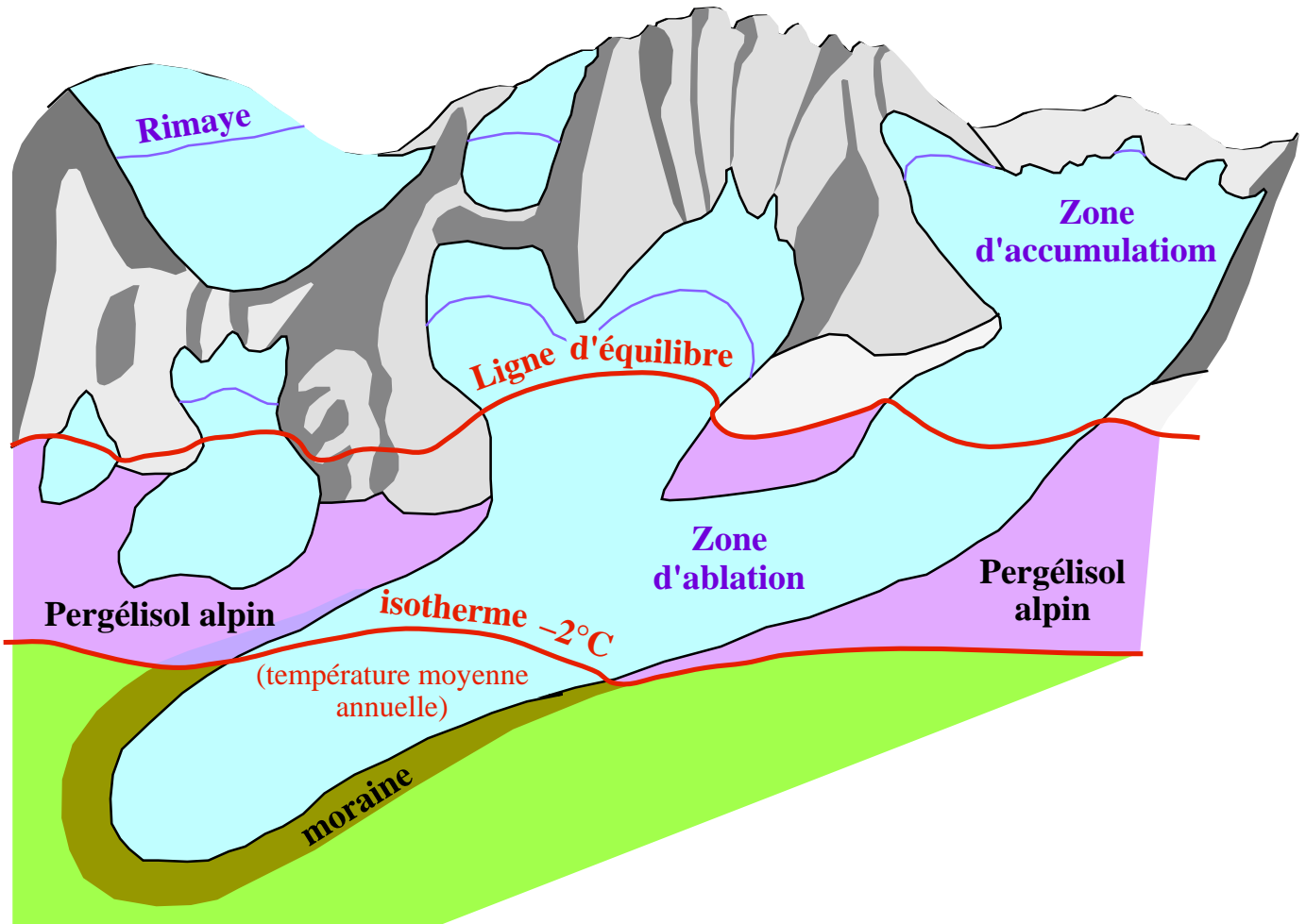
## Zones du pergélisol

Indice de gel  
[°C · jour]

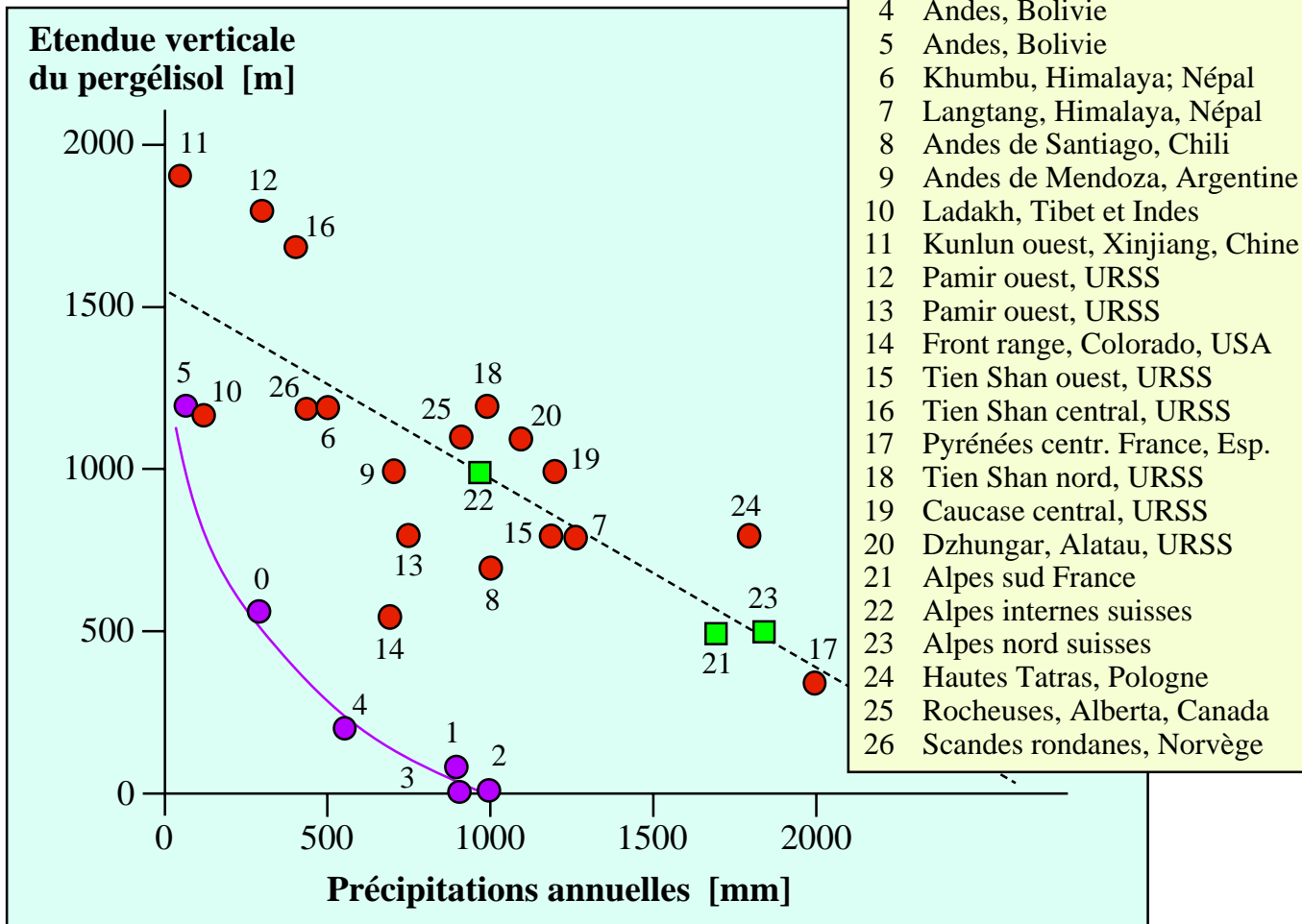
Selon Harris 1981



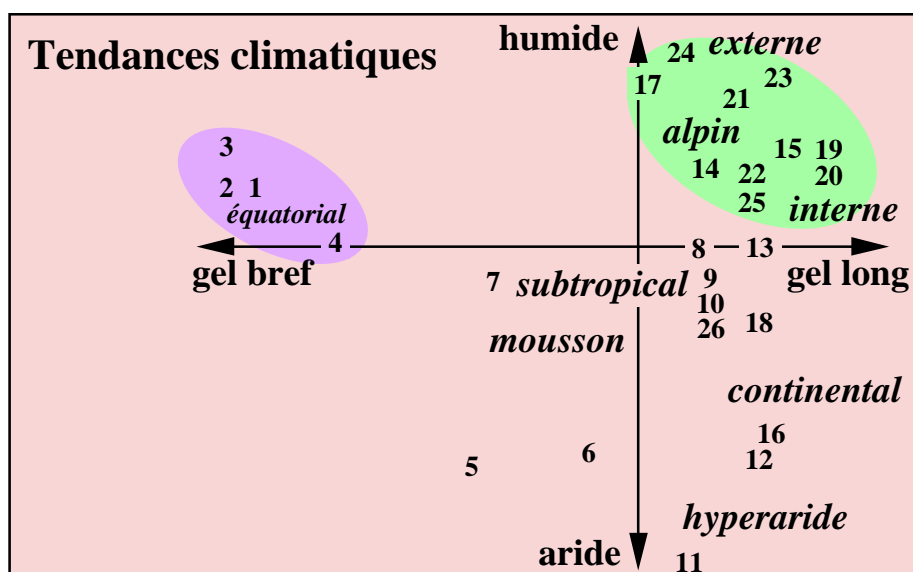
## Limites du pergélisol alpin



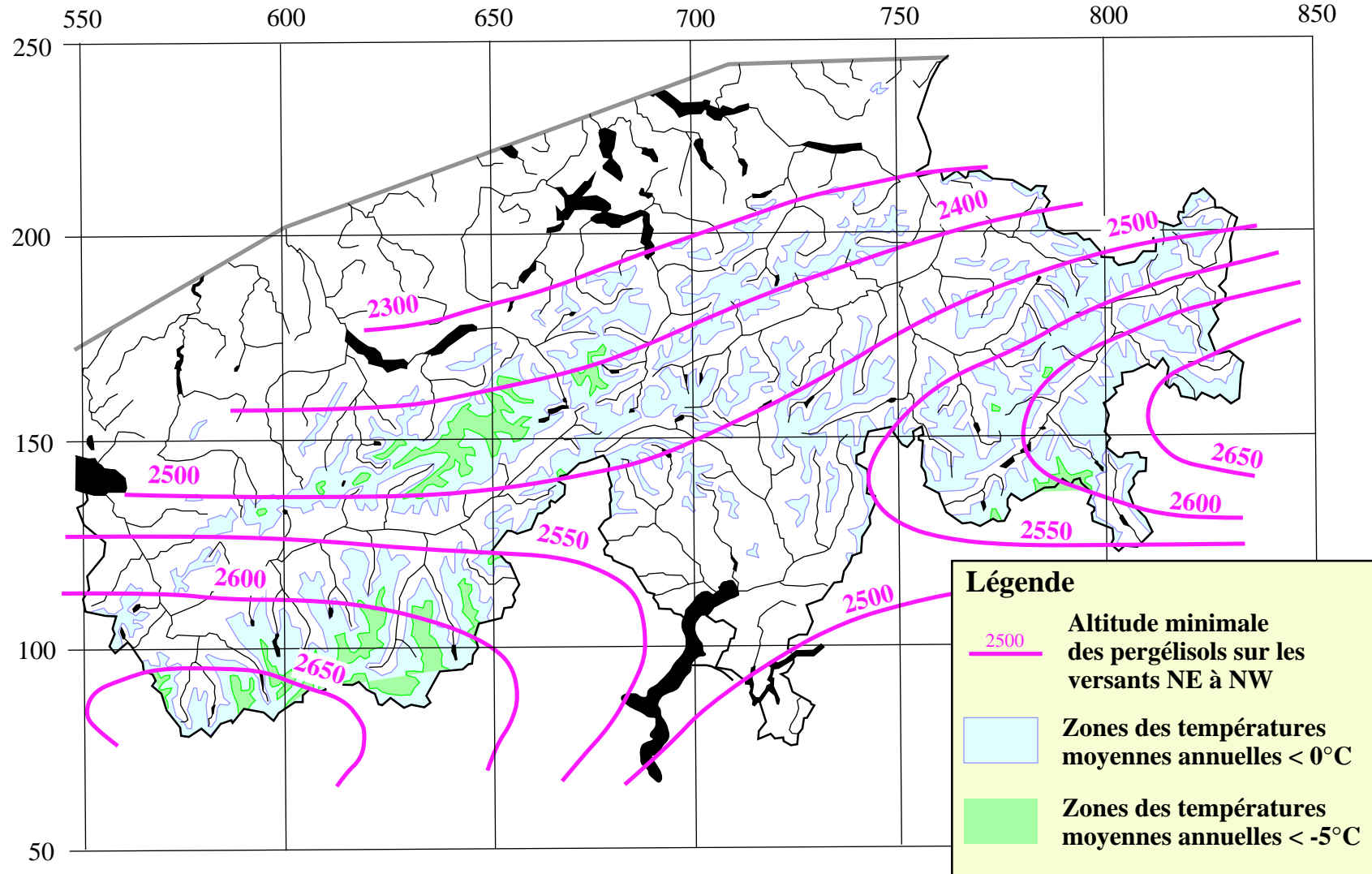
# Etendue verticale du pergélisol



Selon B. Francou, 1993

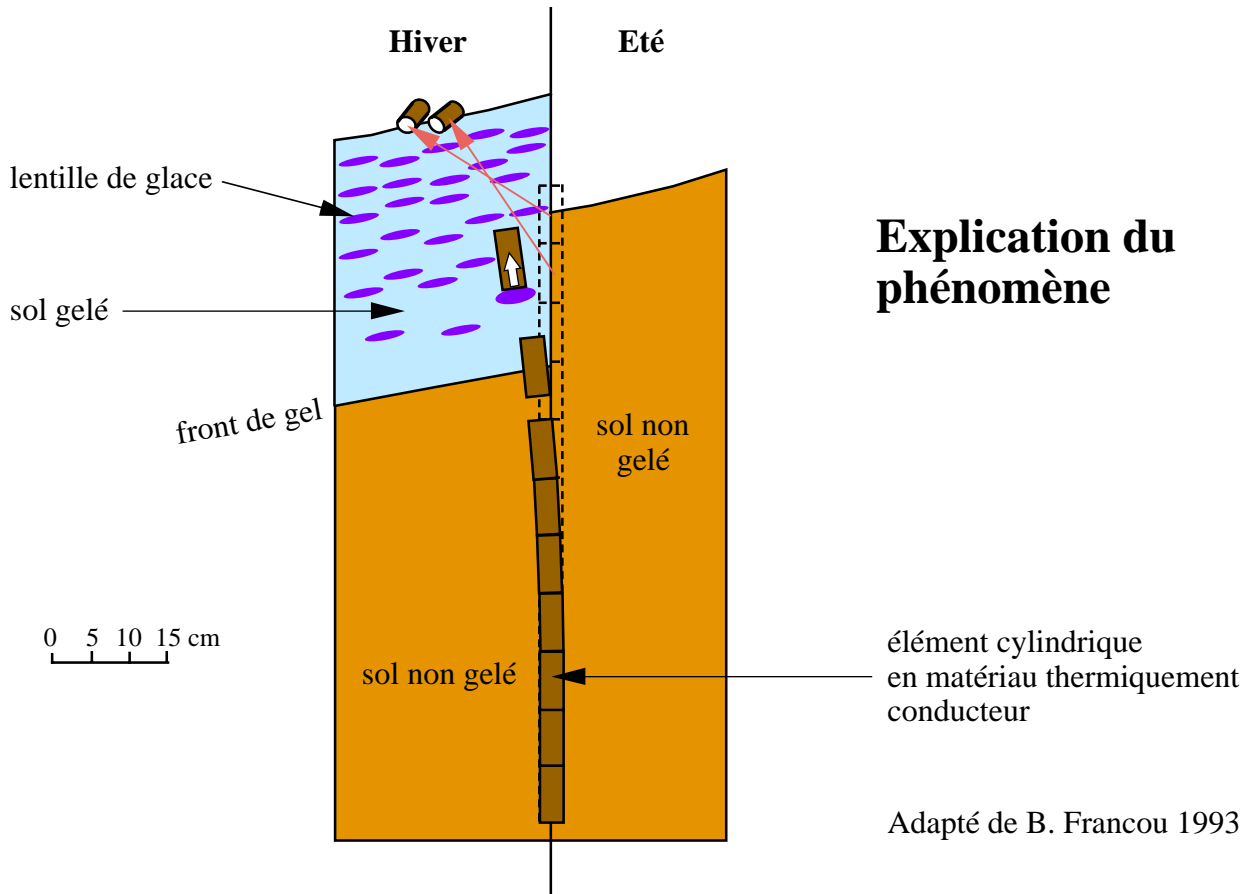


## Les pergélisols en Suisse

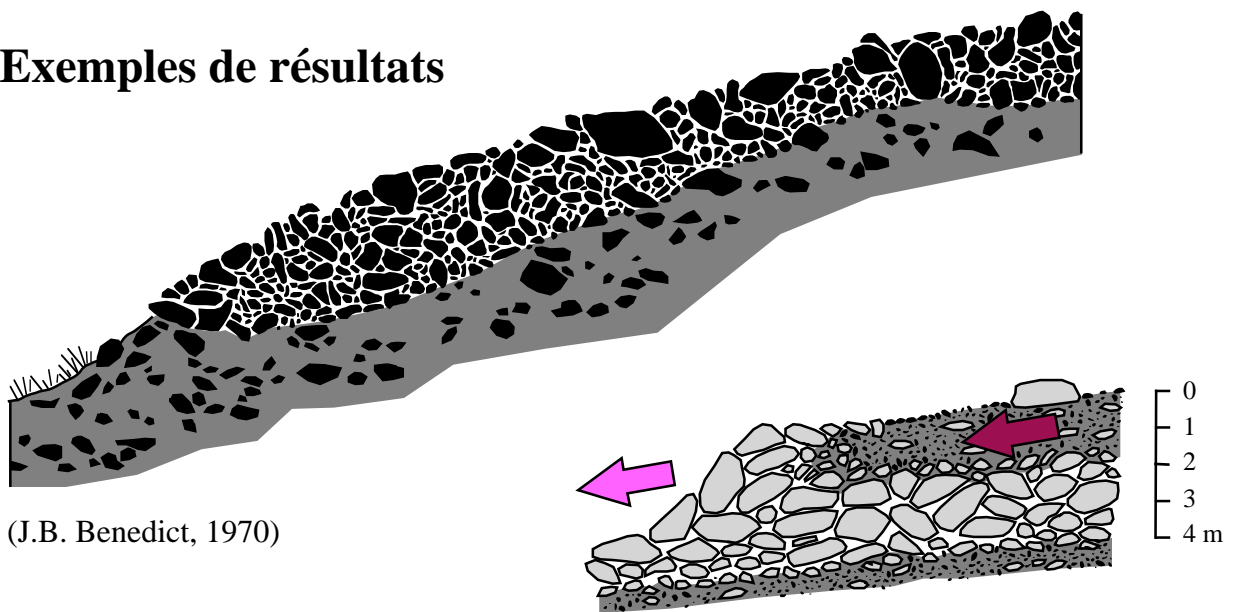


Altitudes minimales des pergélisols adaptées de Barsch, 1978

# Formation des fronts et surfaces pierreuses



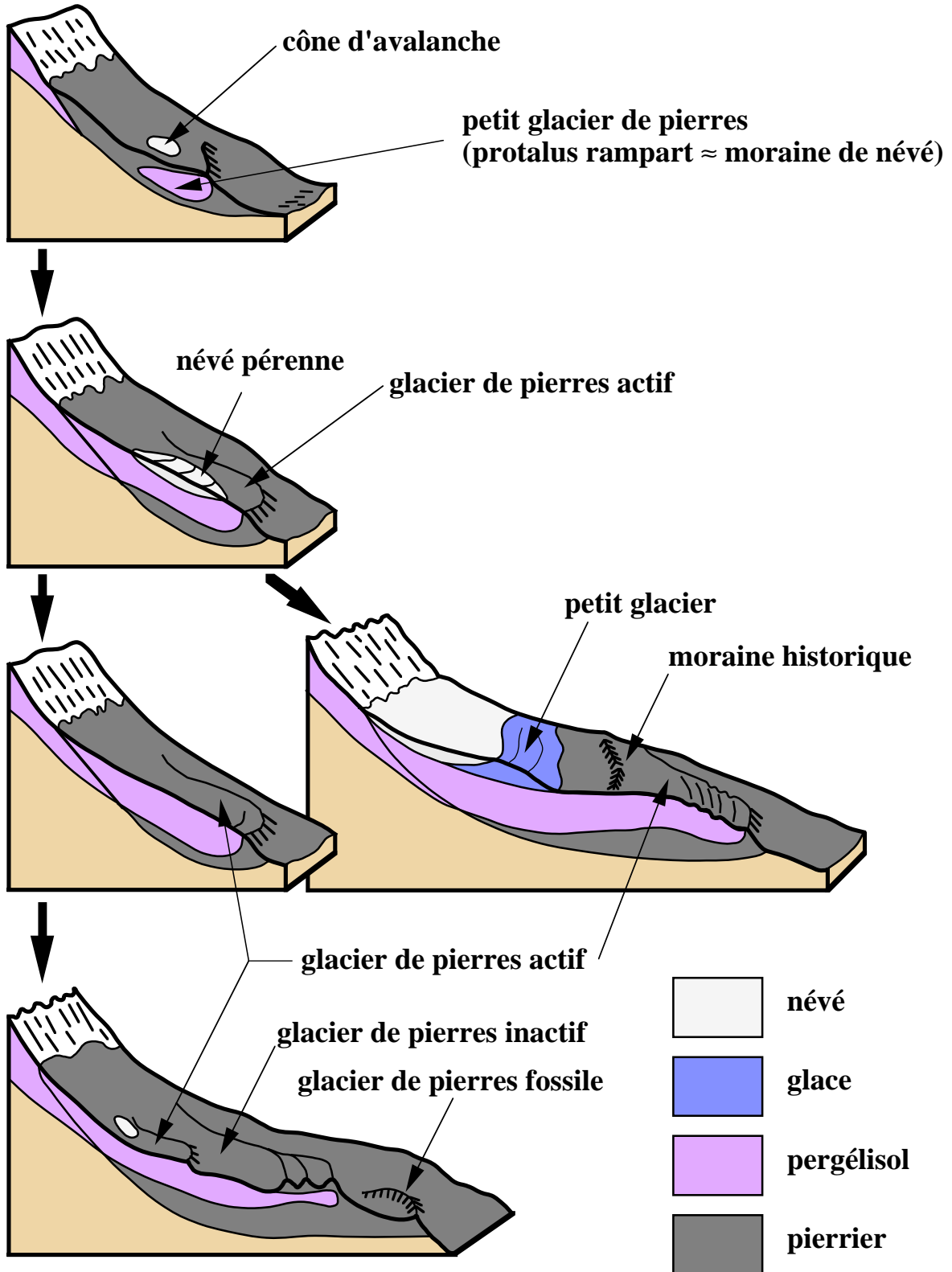
## Exemples de résultats

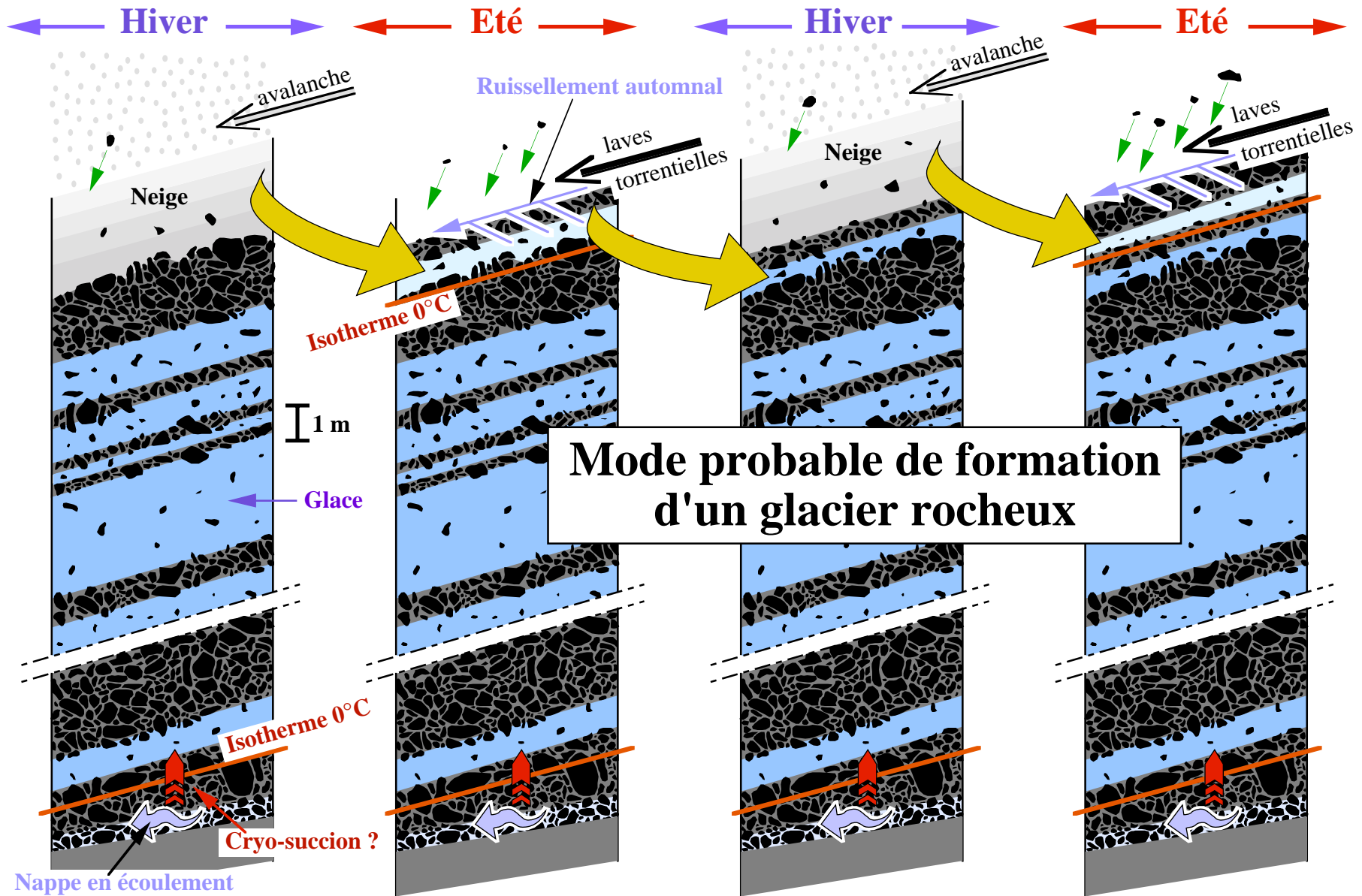




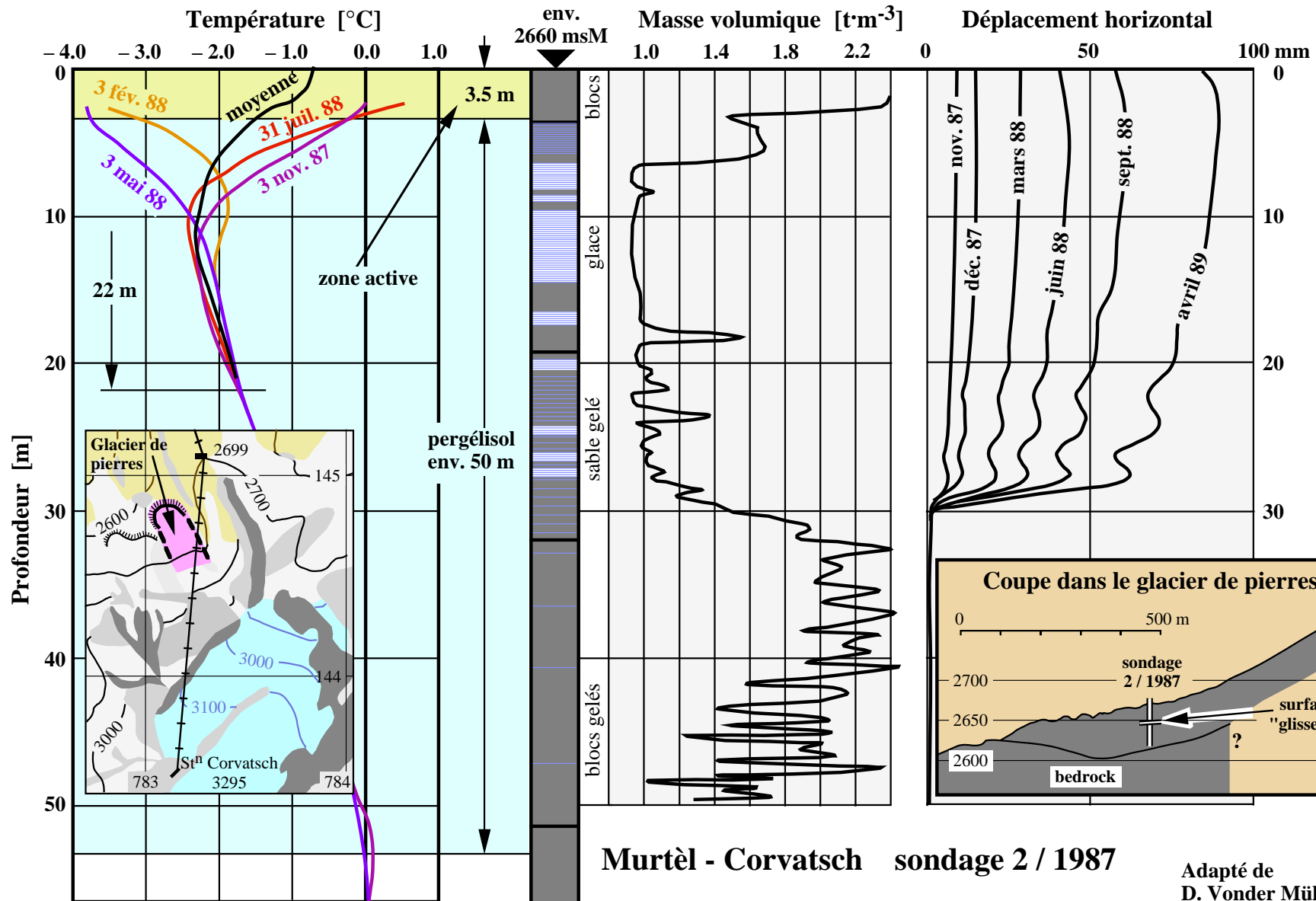
# Formation des glaciers rocheux

Selon Haeberli, 1985





## Glacier rocheux de Murtèl - Corvatsch (GR)



DIETRICH BARSCH. **Permafrost Creep and Rockglaciers.** *Permafrost and Periglacial Processes, Vol. 3: 175-188 (1992)*

...

## **RESEARCH NEEDS**

...

In addition, the following questions need attention:

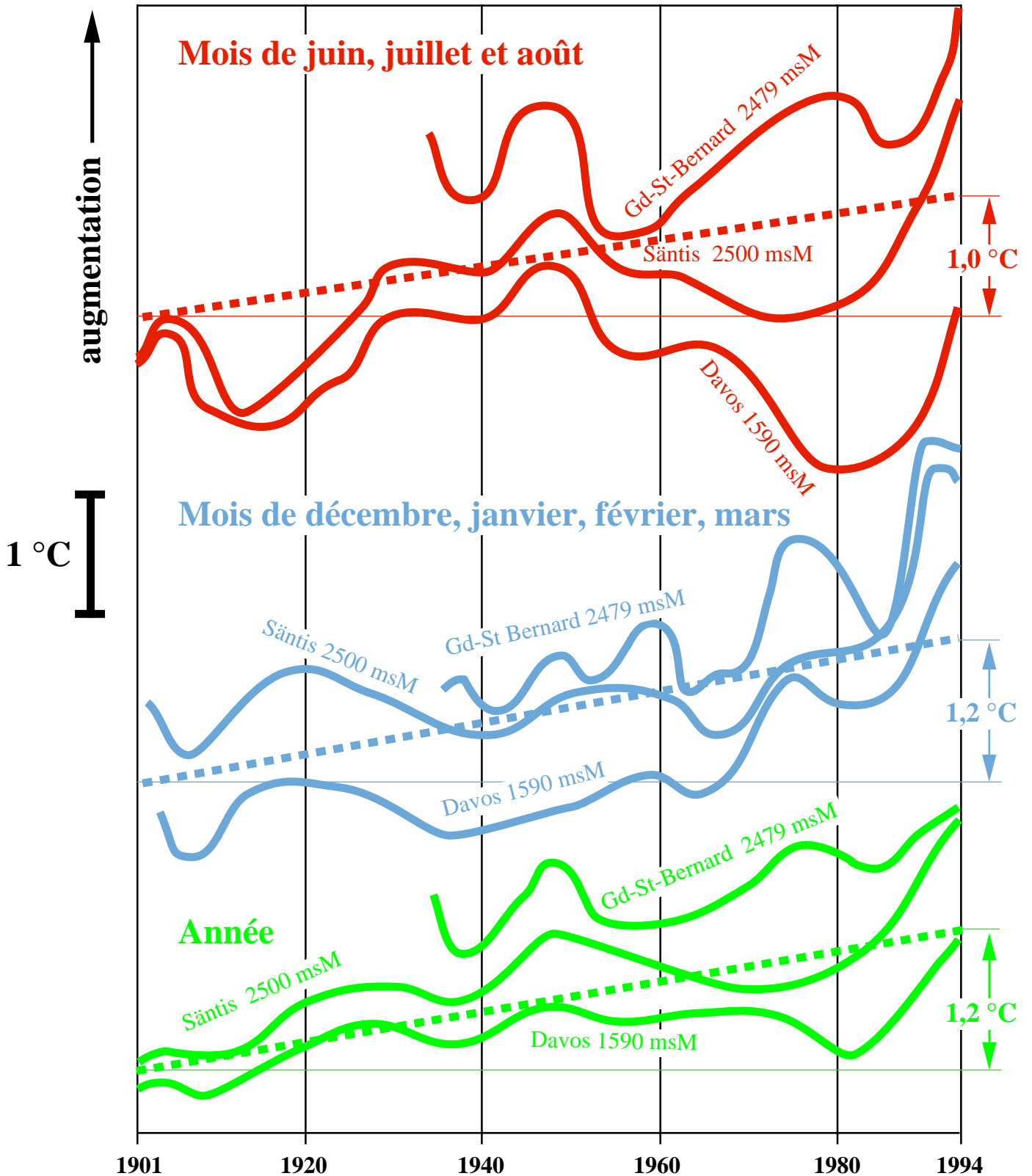
...

**Is there a possibility of obtaining more information on the behaviour of active rockglaciers by an EDP analysis of their micro-relief?**

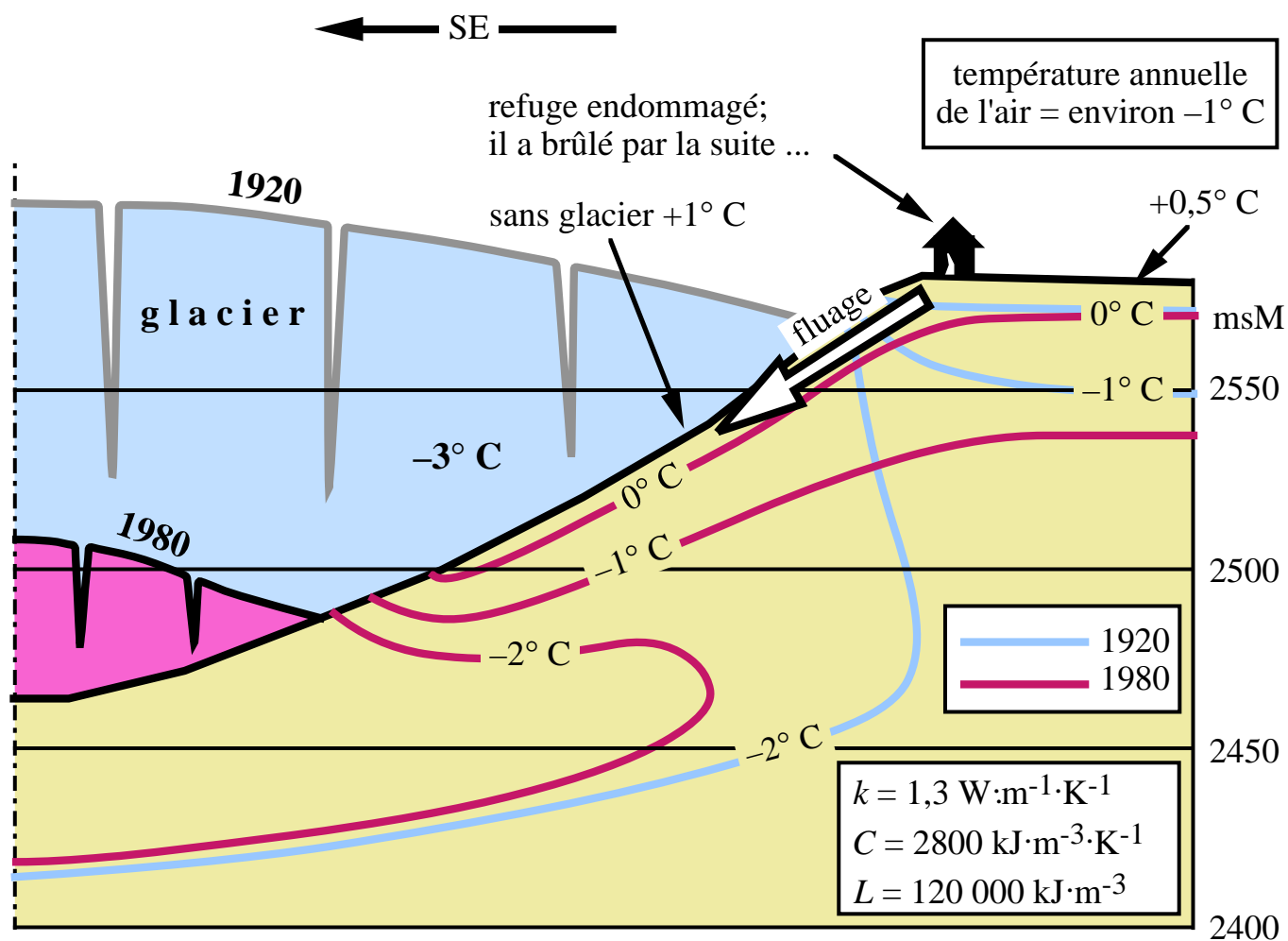
**What is the possibility of computer modelling of rockglacier development in different climatic zones?**

*Ces questions ont été posées à propos des glaciers rocheux mais elles sont aussi valables pour tous les problèmes relatifs aux pergélisols.*

### Tendances de la variation des températures

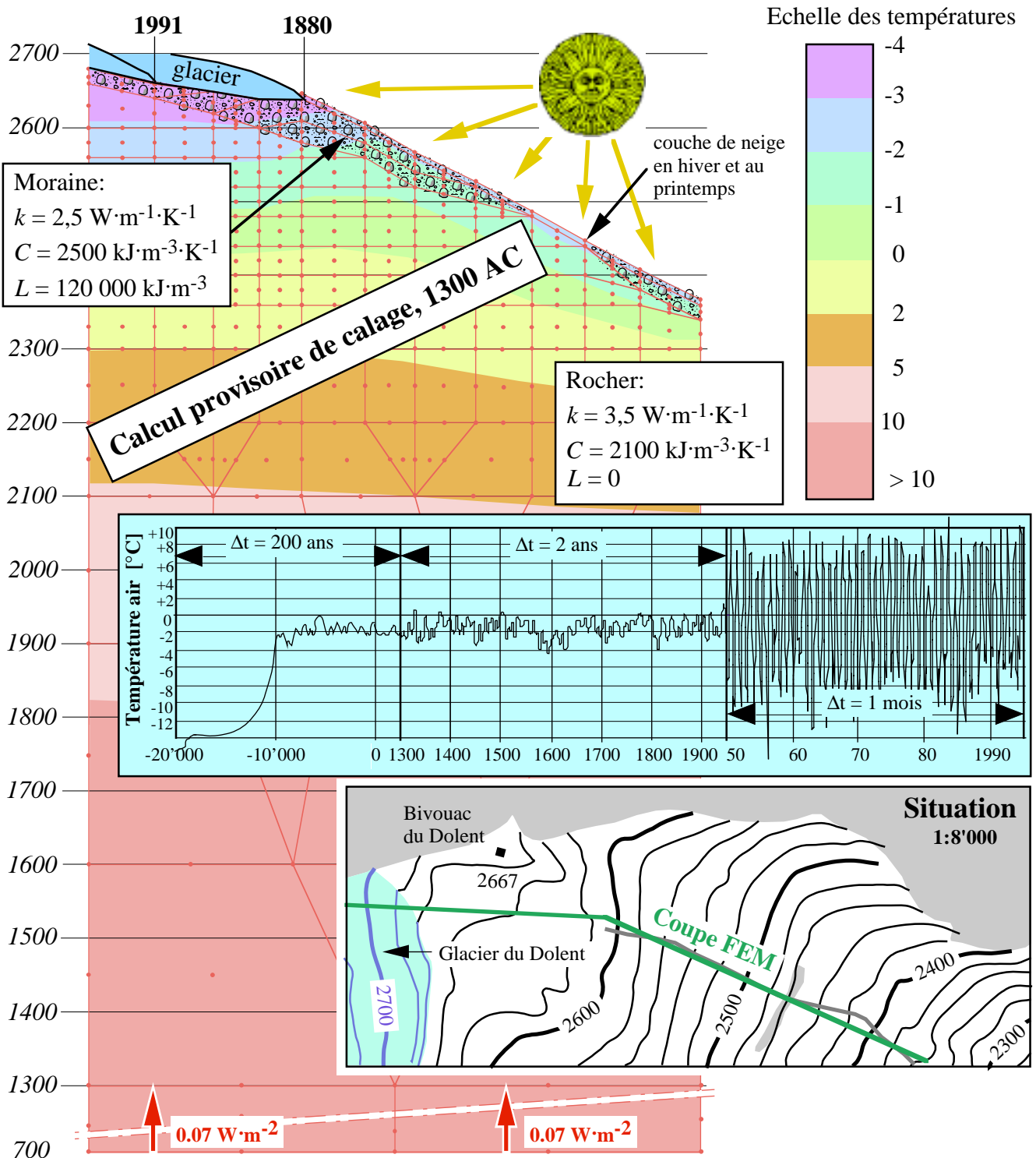


## Modélisation numérique (MEF) de l'effet du retrait d'un glacier sur une moraine

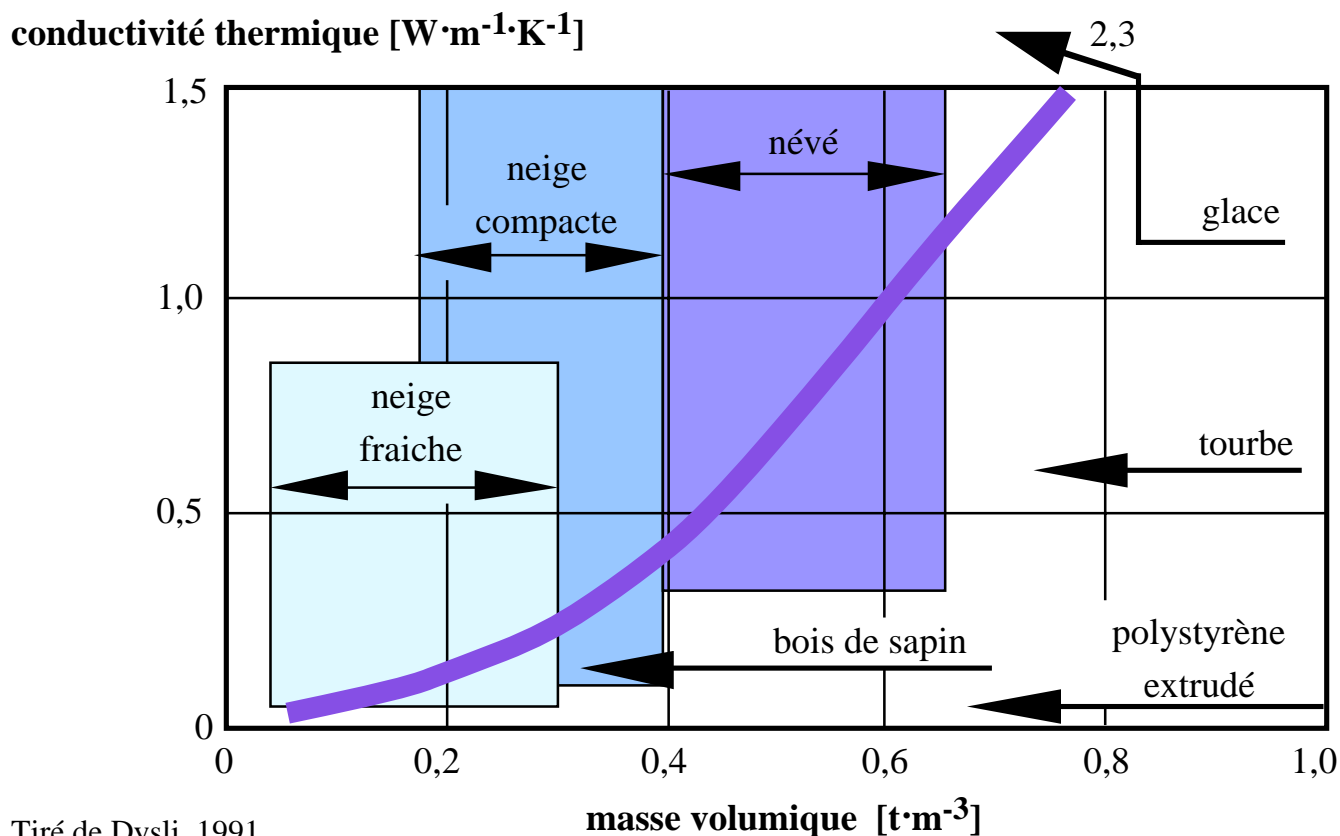
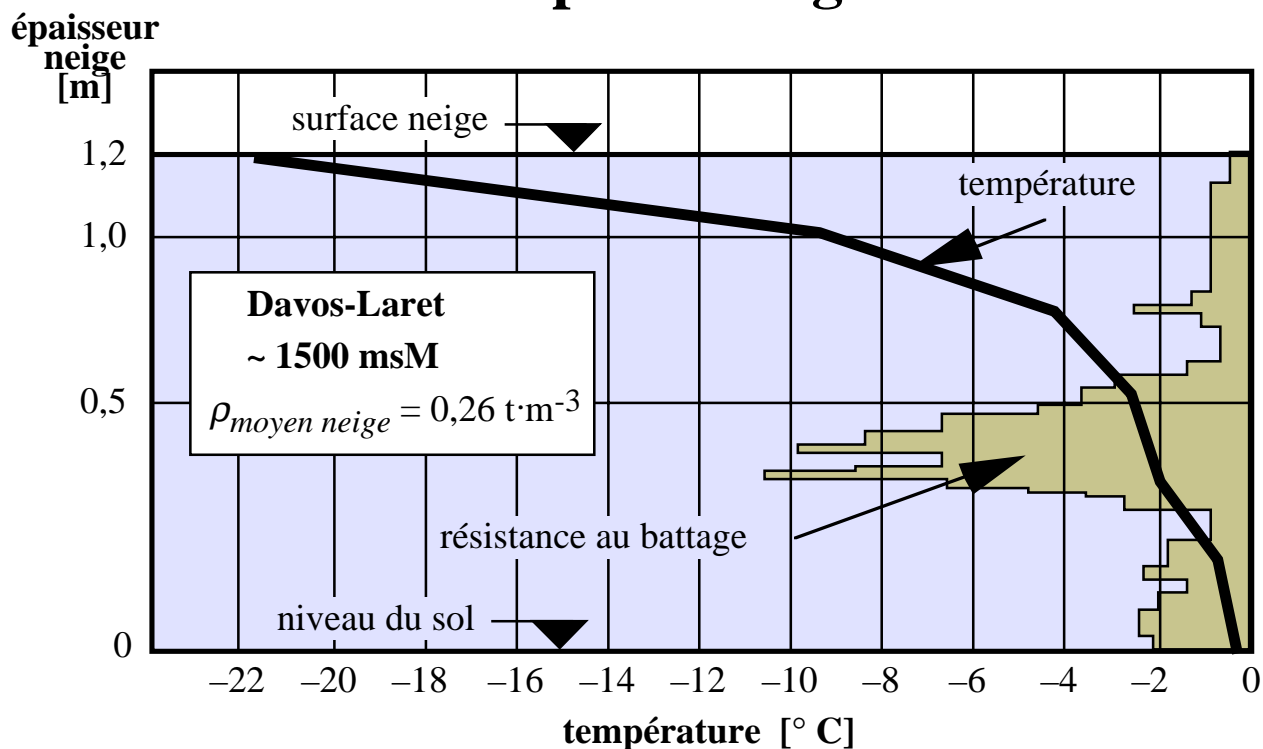


## Modélisation numérique (MEF) des effets du réchauffement d'un pergélisol alpin: moraine du glacier du Dolent

*Avec prise en compte des radiations solaires et de la neige pour remédier à la méconnaissance de la température à la surface du sol en hiver (BTS) comme en été.*



## Isolation par la neige

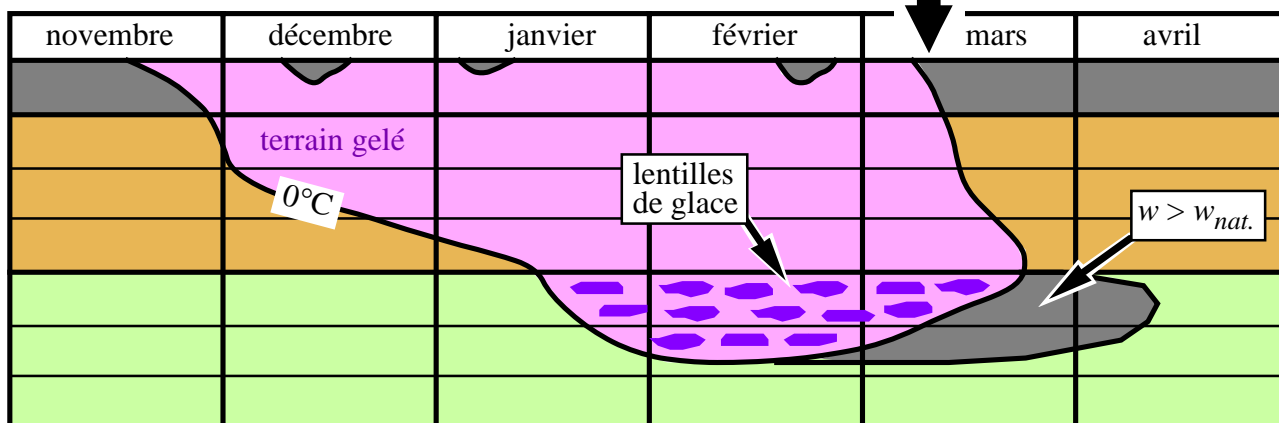
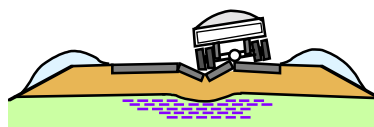
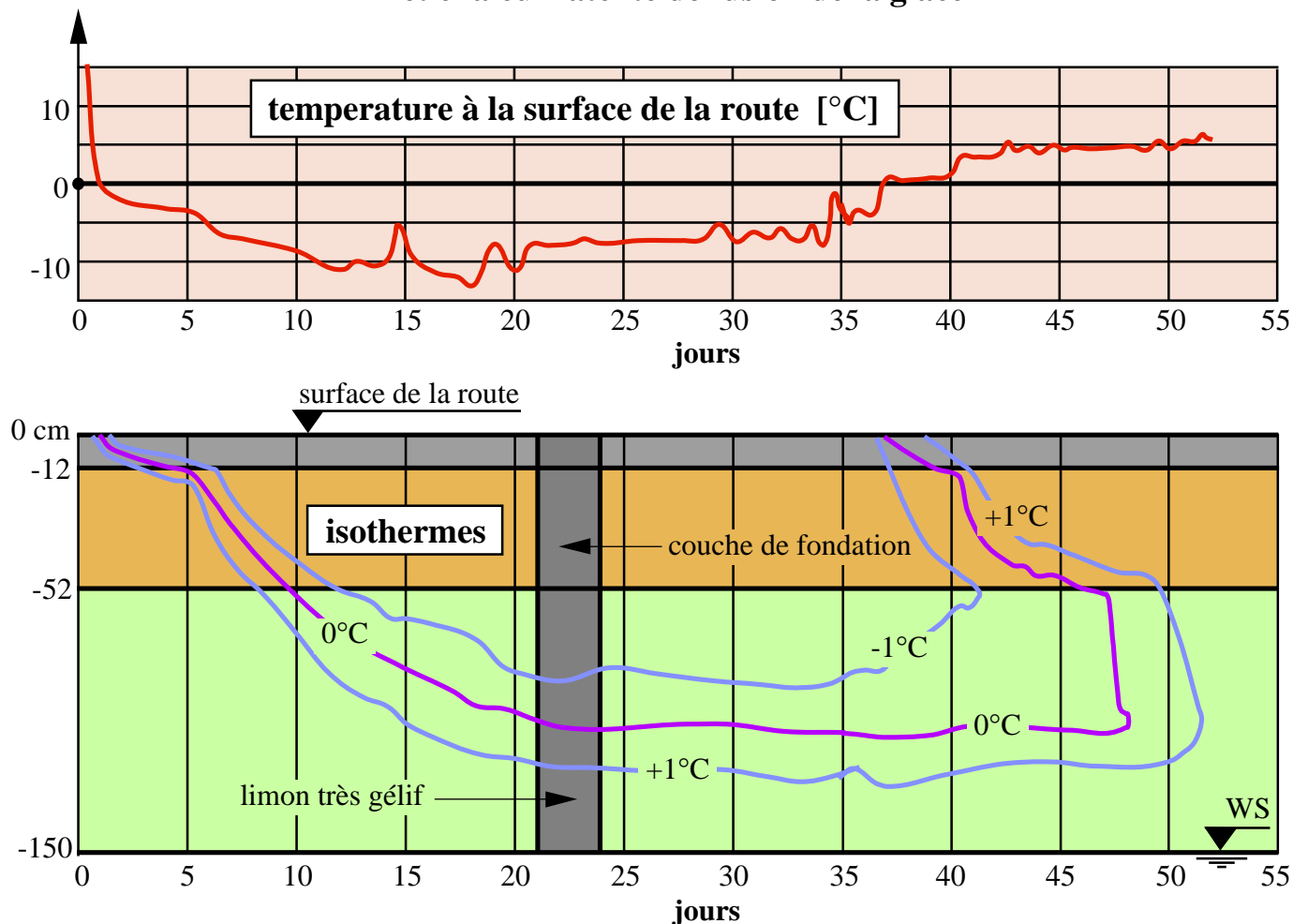


Tiré de Dysli, 1991

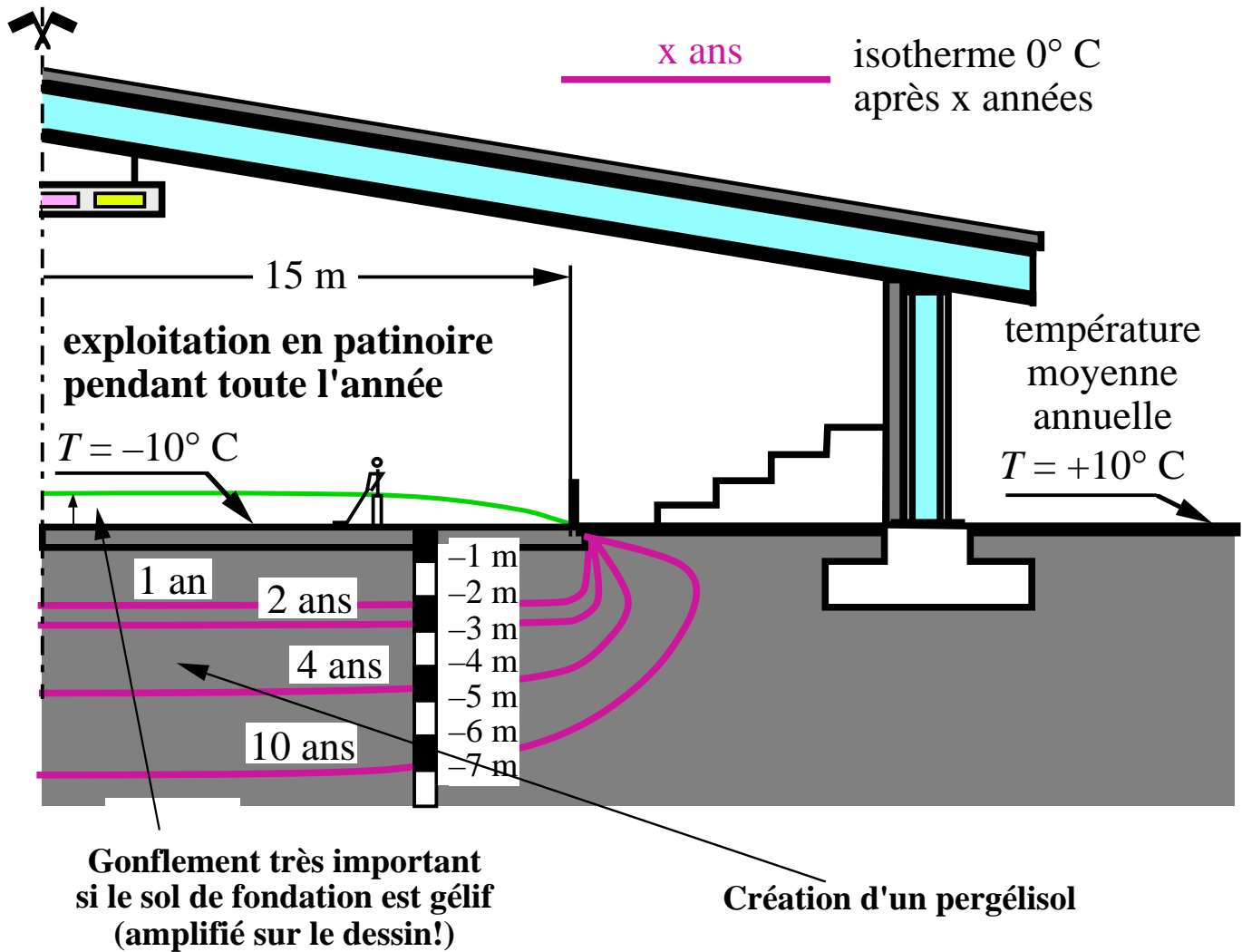


# Dégel sous route ≈ fonte pergélisol

Effet chaleur latente de fusion de la glace



## Les pergélisols artificiels . . .



Tiré de Dysli, 1991

Amis LMS-LMR - 16 novembre 1995

Gel - pergélisol

## Problématique du gel

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