# Glaciology & Ice Cores – Lab

Exercise 1:

a)

Immagine che contiene testo, schermata, software, Icona del computer

Il contenuto generato dall'IA potrebbe non essere corretto.

This image shows the response of the bedrock to the ice sheet’s growth, the more the ice sheet grows the more the bedrock decreases (compared to sea level due to load) / when the ice is gone

Immagine che contiene testo, schermata, software, Icona del computer

Il contenuto generato dall'IA potrebbe non essere corretto.

Here we see the increase in ice thickness while the ice sheet moves 200km to the south and then starts shrinking again. The big increase is due to the sinking of the ELA and the following extension of the ice sheet both in size and height. The second peak is due to the rebound effect. Since the ice lode is lost when the ice sheet moves back northwards the bedrock starts to grow again and causes the ice sheet to increase in thickness again.

1b)

If the ice sheets grow quickly, the bedrock can’t catch up. Bedrock response is slow, the ice sheet could still shrink when the climate is cooling.

Immagine che contiene testo, schermata, software, Software multimediale

Il contenuto generato dall'IA potrebbe non essere corretto.

The climate point, we first observe the increase in thickness when the ice sheet expands southwards. After a while it retrieves back northwards, this is when we start to observe the reduction of the thickness of the ice sheet. (10kyr)

Immagine che contiene testo, diagramma, Diagramma, schizzo

Il contenuto generato dall'IA potrebbe non essere corretto.

We increased the relaxation time of the bedrock to 20 kyr

Immagine che contiene diagramma, testo, linea, Diagramma

Il contenuto generato dall'IA potrebbe non essere corretto.

1000 years

1c)

Immagine che contiene diagramma, schizzo, testo, Diagramma

Il contenuto generato dall'IA potrebbe non essere corretto.

The retreat is blocked due to the mountain. Higher altitudes of the ice sheets change the ass balance of the ice. Relief of the bedrock is very important.