

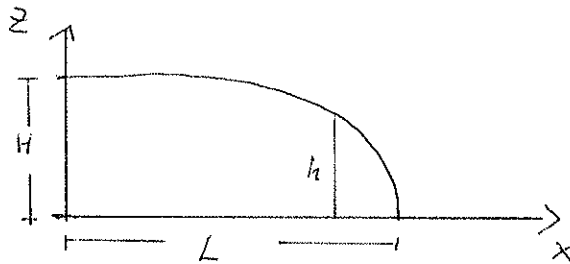
Exercises; Ice sheet dynamics, 30 April 2007

- 1) Calculate the invariants of the deviatoric stress tensor τ_{ij} in the form

$$\sigma^3 - J_1 \sigma^2 + J_2 \sigma + J_3 = 0$$

and show that $J_1 = 0$.

- 2) A uniaxial, isotropic ice sheet of 450 km length ("Greenland") with average density of 900 kg/m³ has bottom shear force of 100 kPa. Estimate the height of the ice sheet at its summit.



- 3) How does the general equation look like at any height $h = h(x)$?