

Exercice 8

RFH entre A et B

$$P_B - P_A = \rho_0 g (z_A - z_B)$$

$$P_B = \rho_0 g \Delta h_1 + P_A$$

$$\Delta h_1 = \frac{P_B - P_A}{\rho_0 g}$$

RFH entre C et B

$$P_B - P_C = \rho_H g (z_C - z_B)$$

$$P_B = \rho_H g (z_C - z_B) + P_C$$

$$P_B - P_C = \rho_H g \Delta h_2$$

$$\text{Donc } \Delta h_1 = \frac{\rho_H g \Delta h_2}{\rho_0 g}$$

$$\Delta h_1 = \frac{\rho_H \Delta h_2}{\rho_0}$$

$$z_A = \frac{\rho_H \Delta h_2}{\rho_0} + z_B$$

$$= 2,1 \text{ m}$$

$$\Delta h_1 = z_A - z_B$$

$$\left\{ \begin{array}{l} \rho_H = 1035 \text{ kg m}^{-3} \\ \rho_0 = 1000 \text{ kg m}^{-3} \\ \Delta h_2 = 60 \text{ m} \\ z_B = -60 \text{ m} \end{array} \right.$$