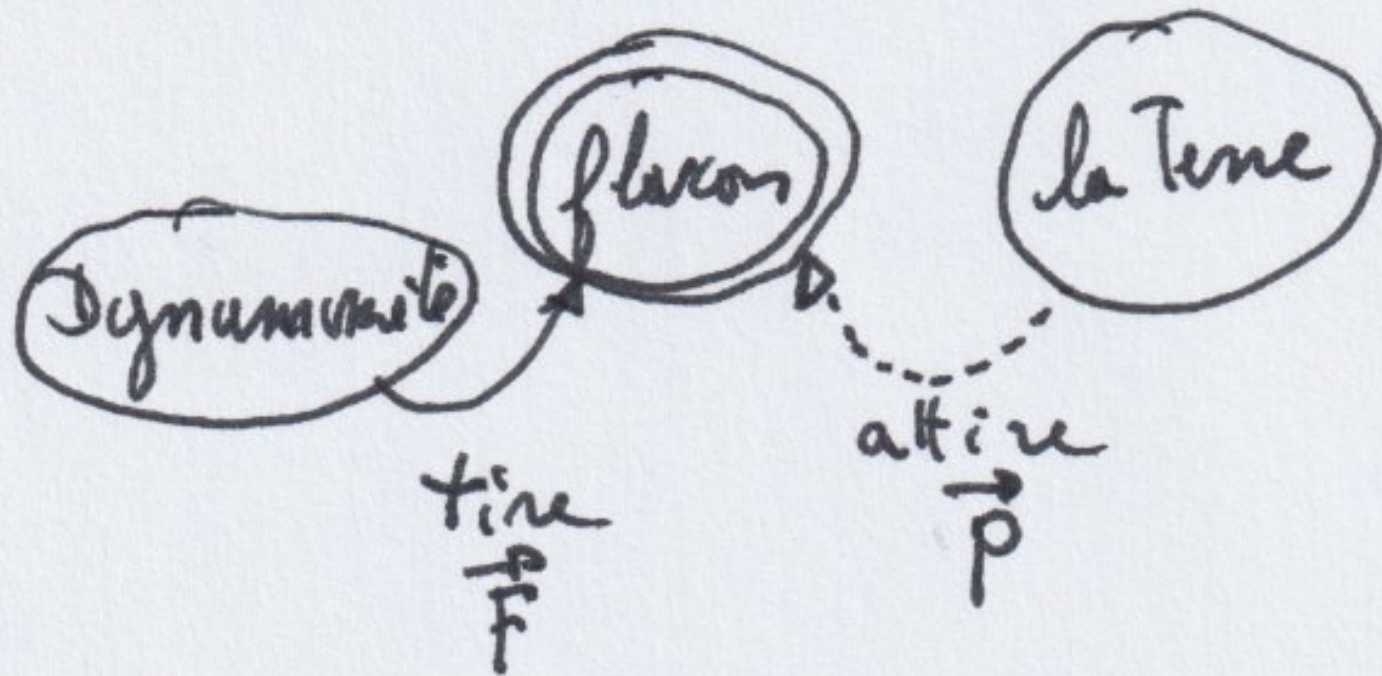
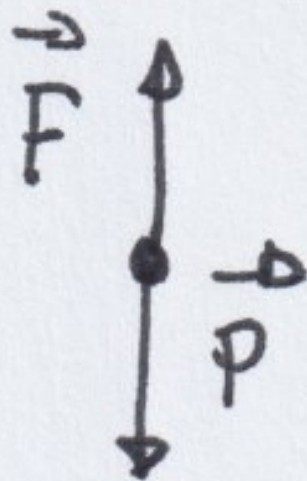


TP n°15 Étude expérimentale de la poussée d'Archimède et de la relation de Bernoulli

12.1.3 Q1

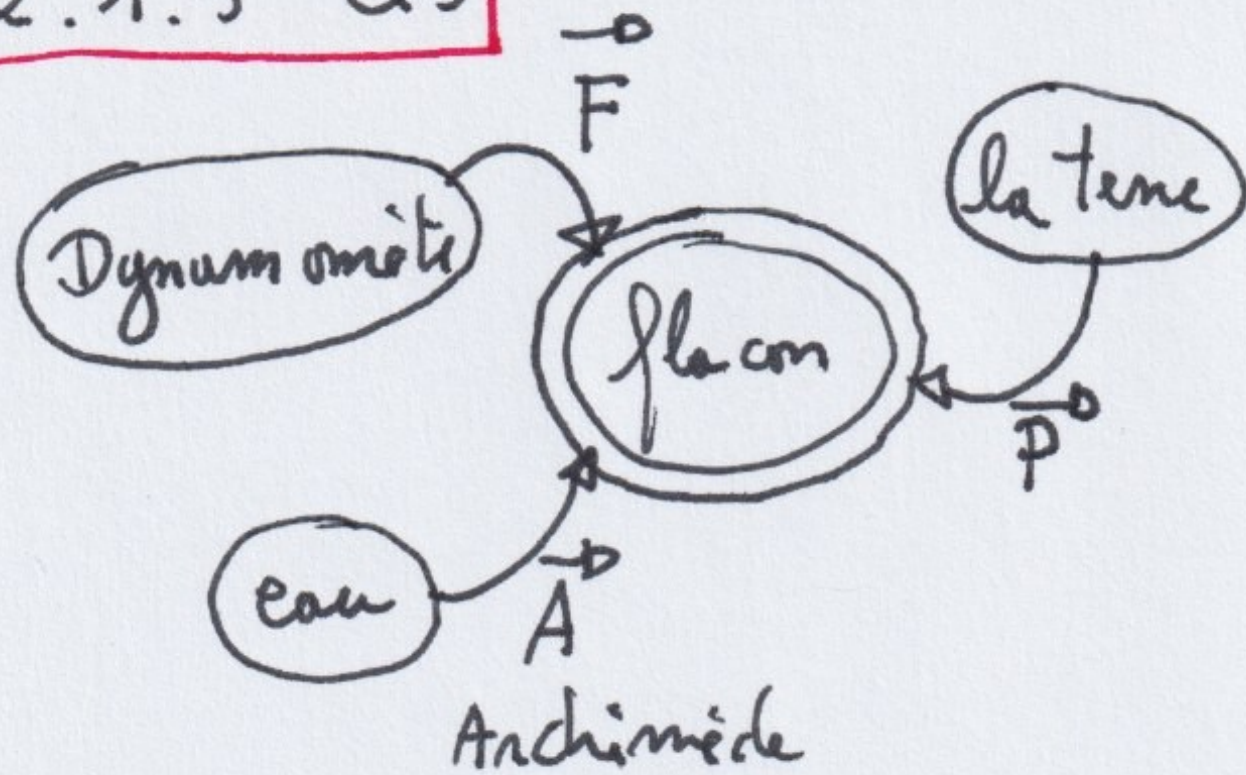


12.1.3 Q2

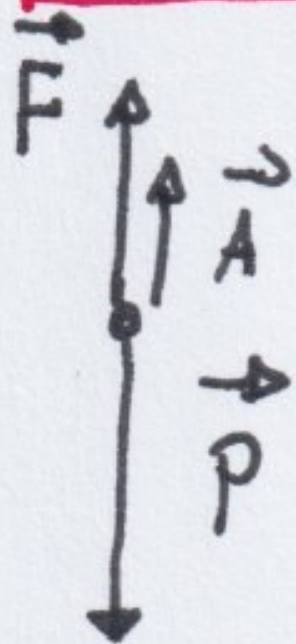


$$\vec{F} + \vec{P} = \vec{0}$$

12.1.3 Q3



12.1.3 Q4



$$\vec{F} + \vec{P} + \vec{A} = \vec{0}$$

12.1.3 Q5

On mesure $\vec{P}$ (hors de l'eau)

Puis on calcule $\vec{A}$ après avoir mesuré $\vec{F}$

$$\vec{A} = -(\vec{F} + \vec{P})$$

En projetant sur l'axe verticale

$$A = -(F - P) = P - F$$

P est l'intensité de F mesurée hors de l'eau

12.1.5 Q4

$$A = 1,0 \times (P - F)$$

12.2.3 Q1

$$\bullet x(t) = x_0 + V_{0x} \cdot t$$

$\downarrow$ $\downarrow$
 x_B V_B

$$x(t) = x_B + V_B \cdot t$$

$$\bullet y(t) = y_0 + V_{0y} \cdot t - \frac{1}{2} g t^2$$

$\downarrow$ $\downarrow$
 y_B 0

$$y(t) = y_B - \frac{1}{2} g t^2$$

12.2.3 Qd

Coordonnées de $P(x_p; 0)$

$$\left. \begin{aligned} x(T) &= x_p = x_B + v_B T \\ y(T) &= 0 = y_B - \frac{1}{2} g T^2 \end{aligned} \right\}$$

$$T = \sqrt{\frac{2 y_B}{g}}$$

12.2.3 Q3

$$x_p = x_B + V_B \sqrt{\frac{2y_B}{g}}$$

12.2.3 Q4

$$\left. \begin{array}{ll} p_A = p_0 \text{ atmospheric} \\ p_B = p_0 \text{ atmospheric} \\ z_A = H & v_A \approx 0 \text{ m s}^{-1} \\ z_B = 0 & v_B = V_B \end{array} \right\}$$

$$V_B = \sqrt{2gH}$$

12.23 Q5

$$x_p = x_B + V_B \sqrt{\frac{2 y_B}{g}}$$

$$x_p - x_B = \sqrt{2gH} \cdot \sqrt{\frac{2 y_B}{g}}$$

$$(x_p - x_B)^2 = 4 \cdot H \cdot y_B$$

$$H = \frac{(x_p - x_B)^2}{4 y_B}$$