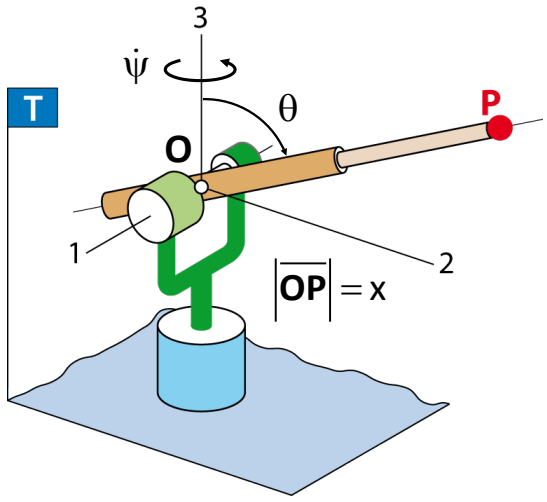
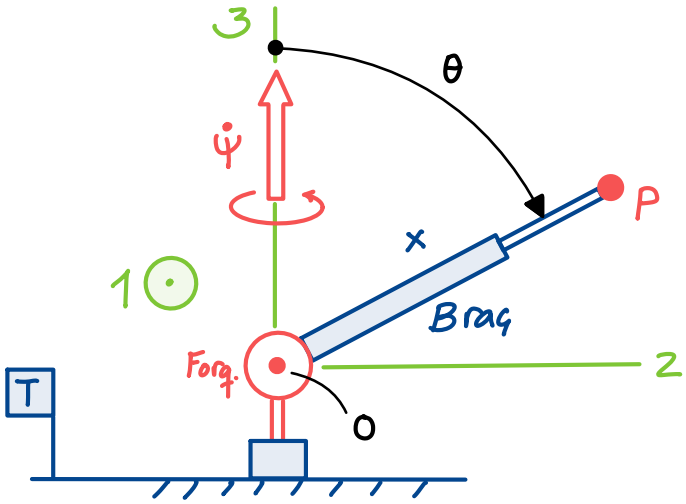
TP1 - G10, 20 feb 2025



$$\{\bar{v}_T(P)\}_B \; ?$$

Solució:



$x = |OP|$

$B = (1, 2, 3)$

- Proj. horitz. antena
- Eix entre brag i forq

$$\{\bar{OP}\}_B = \begin{Bmatrix} 0 \\ x\sin\theta \\ x\cos\theta \end{Bmatrix}_B$$

$$\{\bar{v}_T(P)\}_B = \begin{Bmatrix} 0 \\ \dot{x}\sin\theta + x\dot{\theta}\cos\theta \\ \dot{x}\cos\theta - x\dot{\theta}\sin\theta \end{Bmatrix} + \underbrace{\begin{Bmatrix} 0 \\ 0 \\ \dot{\psi} \end{Bmatrix} \times \begin{Bmatrix} 0 \\ x\sin\theta \\ x\cos\theta \end{Bmatrix}}_{\begin{Bmatrix} -\dot{\psi}x\sin\theta \\ 0 \\ 0 \end{Bmatrix}} =$$

$$= \begin{Bmatrix} -\dot{\psi}x\sin\theta \\ \dot{x}\sin\theta + x\dot{\theta}\cos\theta \\ \dot{x}\cos\theta - x\dot{\theta}\sin\theta \end{Bmatrix}_B$$