

203 Station keeping.

$$\begin{cases} \dot{x} = \cos \theta \\ \dot{y} = \sin \theta \\ \dot{\theta} = u \end{cases}$$

station keeping \Leftrightarrow rester dans un voisinage autour de 0.

②

$$\begin{cases} \dot{x} = \cos \theta \\ \dot{y} = \sin \theta \\ \dot{\theta} = u \end{cases}$$

\rightarrow
 u

$$v = \sqrt{\dot{x}^2 + \dot{y}^2} = \sqrt{\cos^2 \theta + \sin^2 \theta} = 1$$

③

$$\begin{cases} \dot{x} = \cos \theta \\ \dot{y} = \sin \theta \\ \dot{\theta} = u \end{cases}$$

\Rightarrow

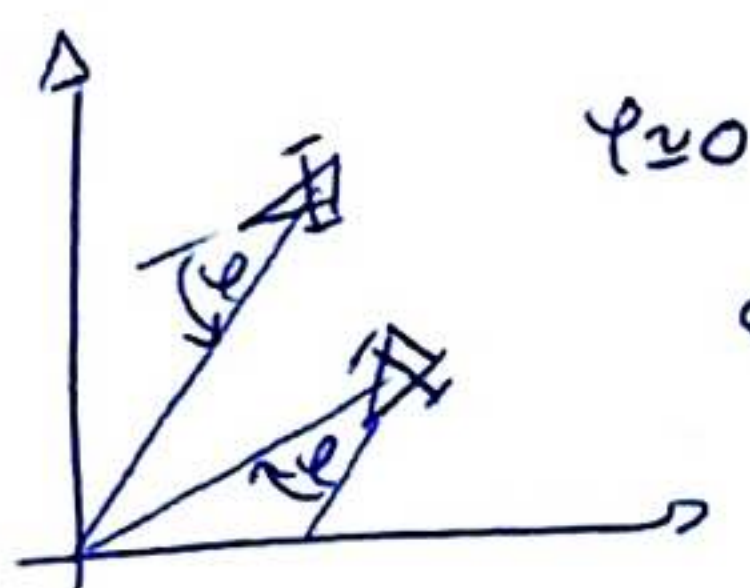
$$\begin{cases} \dot{\varphi} = \frac{\sin \varphi}{d} + u \\ \dot{d} = -\cos \varphi \\ \dot{\alpha} = -\frac{\sin \varphi}{d} \end{cases}$$

représentation polaire.

③'

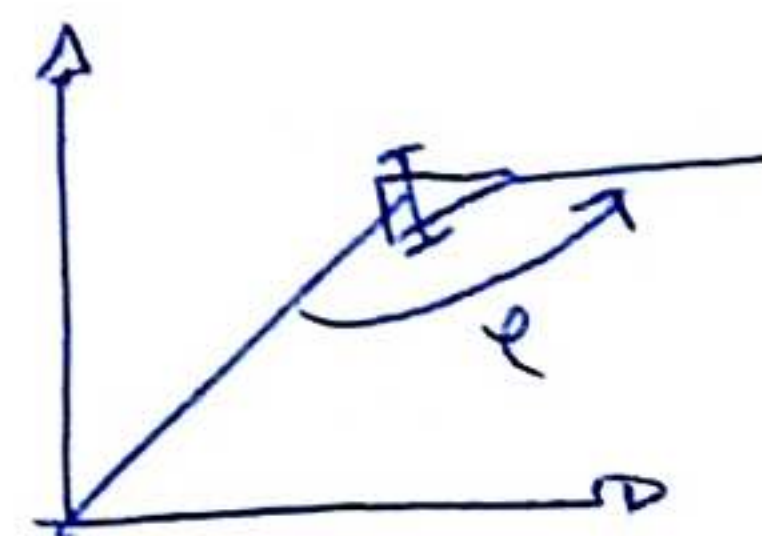
pointe à l'opposé: $\cos \varphi \approx -1$

④



$\varphi \geq 0$

on a $u = -\sin \varphi$



$u = 1$

on prendra $\cos \varphi \leq \frac{1}{\sqrt{2}}$ arbitrairement