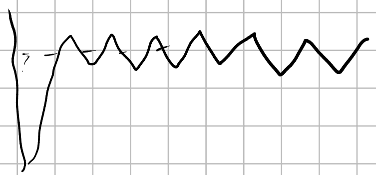
Contidadad basado en lyap: V .-

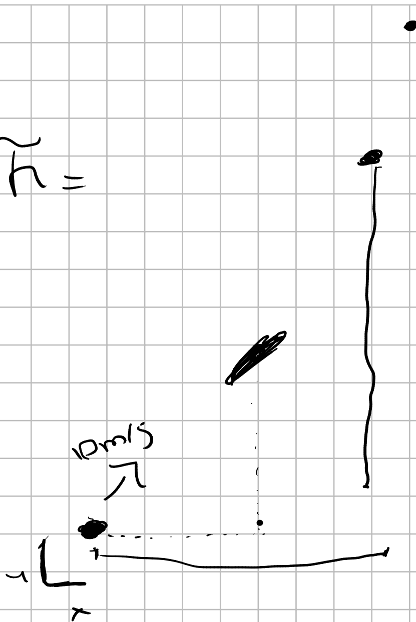
$V(x) > 0 \quad \forall x \neq 0$ ✓ .-

$\dot{V}(x) < 0$.- ✓

$\tilde{h} =$

$$v = J^{-1}(\dot{h}_d + \tilde{h})$$





$$v = J^{-1}(\dot{h}_d + \tan(\tilde{h}))$$

$$\begin{bmatrix} k_1 \\ -k_3 \end{bmatrix}$$

$$y(\tilde{h}) = 2 \cdot \tan(\tilde{h})$$

$$v = J^{-1}(\dot{h}_d + K_2 \tan(K_2 K_1 \tilde{h}))$$

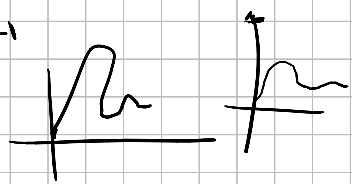
$$\begin{bmatrix} k_{11} & 0 \\ 0 & k_{11} \end{bmatrix} \begin{bmatrix} \tilde{x} \\ \tilde{y} \end{bmatrix}$$

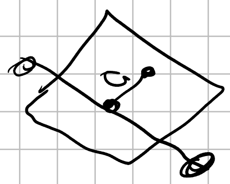
$$k_{11}\tilde{x} + k_{11}\tilde{y}$$

$$\begin{bmatrix} k_{11} & 0 \\ 0 & k_{11} \end{bmatrix}$$

$$1 \tan\left(\frac{1}{1} \cdot 2\tilde{h}\right)$$

$$\rightarrow 0{,}5 \tan\left(\frac{1}{0{,}5} \cdot 2\tilde{h}\right)$$





$$h_d = \begin{bmatrix} x_d(t) \\ y_d(t) \end{bmatrix} \quad \dot{h}_d = \begin{bmatrix} \dot{x}_d(t) \\ \dot{y}_d(t) \end{bmatrix}$$

$$K_1 = \begin{bmatrix} k_1 & 0 \\ 0 & k_1 \end{bmatrix}$$

$$K_2 = \begin{bmatrix} k_1 & 0 \\ 0 & k_1 \end{bmatrix}$$

$k_1 = 1$ $\qquad$ $k_2 = 0,4$

k_1 1

$$K_1 = k_1 \cdot \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} = \qquad K_2 = k_2 \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

$$\tilde{h} = h_d - h$$