

12. 11. 25

УПРАВЛ. ПО ПОЗИЦИИ
(ДВИГАТЕЛЕМ)

position control

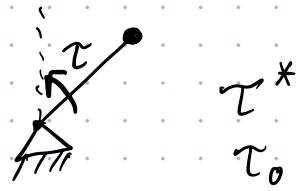


ЦЕЛЕВОЙ УГОЛ θ^*

$$I_t = -K_p(\theta^* - \theta_0) - K_d \dot{\theta}_0$$

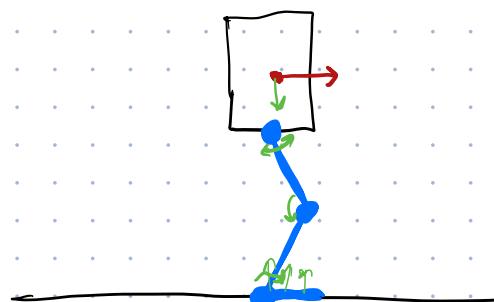
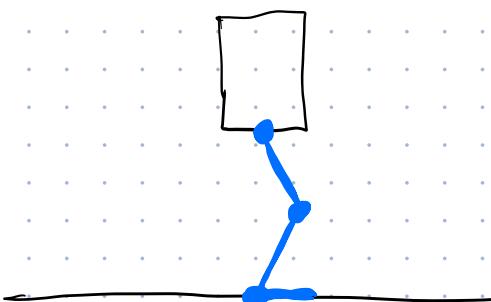
НУЖНО УМЕТЬ
ИЗМЕРИТЬ

УПРАВЛЕНИЕ ПО МОМЕНТАМ
(torque control)



ЦЕЛЕВОЙ МОМЕНТ τ^*

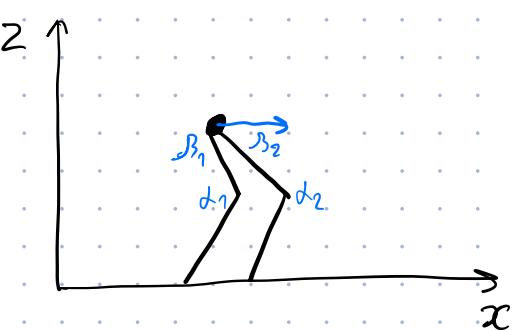
$$I^* = K_m \tau^*$$



1) III ЗАК. Н.



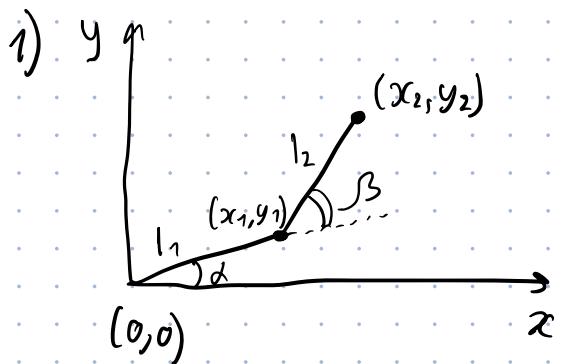
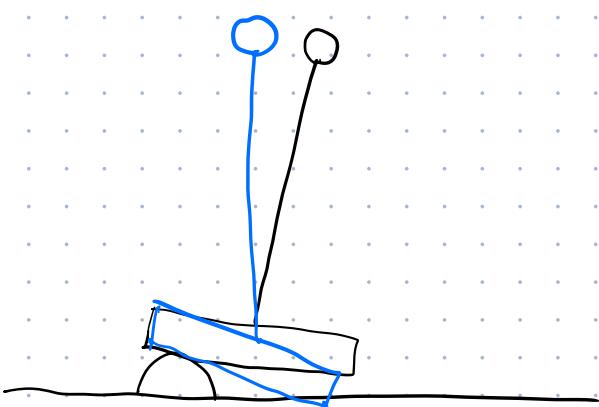
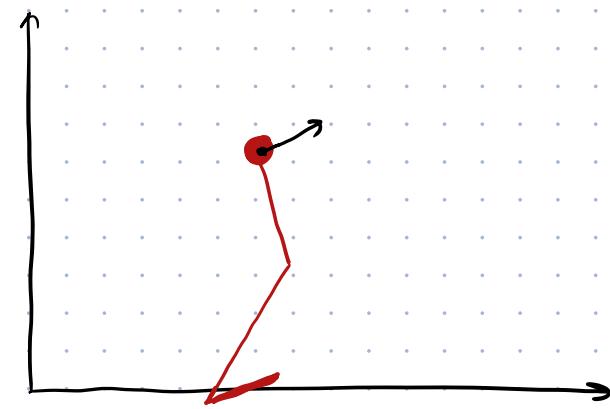
$$y = \begin{pmatrix} x \\ \dot{x} \\ \ddot{x} \\ \ddot{\ddot{x}} \\ \ddot{\ddot{\ddot{x}}} \end{pmatrix} \quad - \text{ВЕК. СОСТ.}$$



$$y_{k+1} = f(y_k, u_k)$$

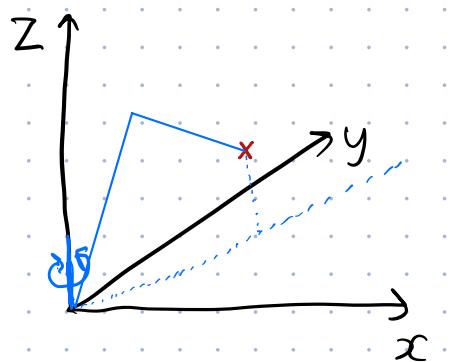
$$y^* = \{y_{i+1}^*\}_{i=1}^N$$

$$u = \begin{pmatrix} d_1 \\ d_2 \\ \theta_1 \\ \theta_2 \end{pmatrix}$$



ПРАМ. КИНЕМ.: $(l_1, l_2, \alpha, \beta) \xrightarrow{FK} (x_2, y_2)$

ОБРАТНАЯ КИНЕМАТ.: $(x_2, y_2, l_1, l_2) \xrightarrow{IK} (\alpha, \beta)$



Webots

Ned

2) ПЛАТФОРМА СТЮАРТА

