

$$\ddot{y} = \frac{M}{v_{eq}^2} \left(v_f(D)^2 - 2v_f(D)\dot{y}(t) + \dot{y}^2(t) - v_{eq}^2 \right)$$

\uparrow a
 \uparrow b

$$b = M$$

$$a = \frac{M}{v_{eq}^2}$$

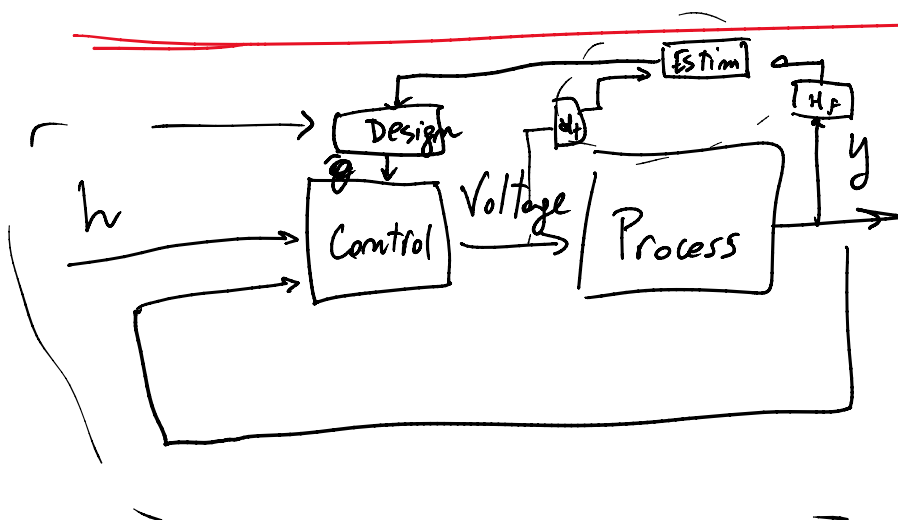
$$\ddot{y} = \underbrace{a(v_f(D)^2 - 2v_f(D)\dot{y}(t) + \dot{y}^2(t))}_{\varphi_1} - \underbrace{b}_{\varphi_2} \cdot 1$$

$$\ddot{y} = \varphi^T(t) \theta$$

$$\theta = \begin{pmatrix} a \\ b \end{pmatrix}$$

$$y_f(t) = H_f(r) y$$

$$u_f(t) = H_f(r) u$$



$$u \equiv v_f$$

$$R v_f = T h - S y$$

\downarrow \leftarrow
 Design