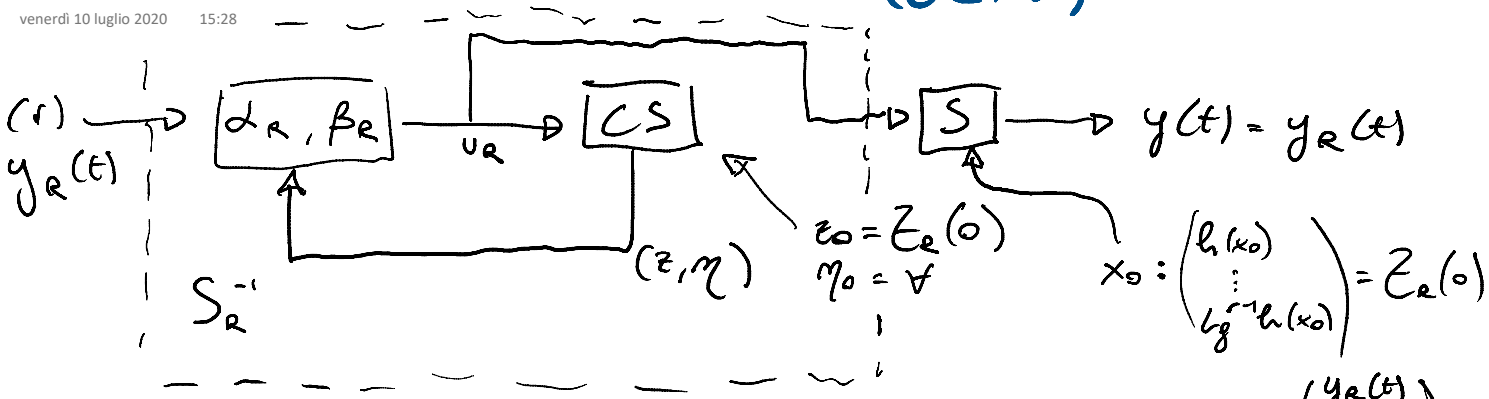
21. Exact reference tracking problem (reference reproduction) (ERTP)

venerdì 10 luglio 2020 15:28



$$z(t) = z_R(t) = \begin{pmatrix} y_R(t) \\ \dot{y}_R(t) \\ \vdots \\ y_R^{(r-1)}(t) \end{pmatrix}$$

$$\begin{cases} \dot{\eta} = q(z_R(t), \eta(t)) \\ u_R = \dfrac{y_R^{(r)}(t) - b(z_R(t), \eta(t))}{a(z_R(t), \eta(t))} \end{cases}$$

$$\dot{z} = \begin{pmatrix} 0 & 1 & & \\ & \ddots & \ddots & \\ & & & 1 \\ 0 & & & 0 \end{pmatrix} z + \begin{pmatrix} 0 \\ \vdots \\ 0 \\ 1 \end{pmatrix} y_R^{(r)}(t)$$

The inverse dynamics in the ERTP is

$$\dot{\eta} = q(z_R(t), \eta)$$