

State-Space Realizations

$$\begin{array}{ccc} u & \xrightarrow{\quad \dot{x} = Ax + Bu \\ \quad y = Cx \quad} & y \end{array}$$



$$G(s) = C(Is - A)^{-1}B$$

Open-loop poles are the eigenvalues of A :

$$\det(Is - A) = 0$$

Then we add a controller to move the poles to desired locations:

