

lect 3 Example 3.2

Q: observability

$$A = \begin{bmatrix} 1.1 & -0.3 \\ 1 & 0 \end{bmatrix} \quad C = \begin{bmatrix} 1 & -0.5 \end{bmatrix}$$

$$\text{Solution } W_o = \begin{bmatrix} C \\ CA \end{bmatrix} = \begin{bmatrix} 1 & -0.5 \\ 0.6 & -0.3 \end{bmatrix}$$

$$CA = \begin{bmatrix} 1 & -0.5 \end{bmatrix} \begin{bmatrix} 1.1 & -0.3 \\ 1 & 0 \end{bmatrix} = \begin{bmatrix} 0.6 & -0.3 \end{bmatrix}$$

$$1.1 - 0.5 = 0.6 \quad -0.3$$

$$\det W_o = \begin{vmatrix} 1 & -0.5 \\ 0.6 & -0.3 \end{vmatrix} = -0.3 + 0.5 \times 0.6 = 0$$

not observable