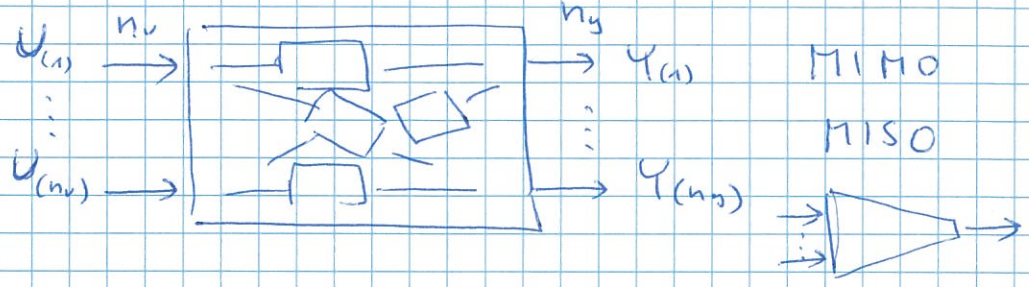
$$G_{CL} = \frac{G_0}{1 + G_0 M_0}$$ IF M_0 KNOWN

$$G_0 \leftarrow \hat{G}(j\omega_k) = \frac{\hat{G}_{CL}}{1 - M_0 \hat{G}_{CL}}$$

FROM CLOSE-LOOP ESTIMATION

MIMO MEASUREMENTS



$$y_{(i)} = G_{(i,1)} u_{(1)} + G_{(i,2)} u_{(2)} + \cdots + G_{(i,n_u)} u_{(n_u)}$$

AT $\omega = \omega_k$

$$\begin{bmatrix} y_{(1)}(k) \\ \vdots \\ y_{(n_y)}(k) \end{bmatrix} = \begin{bmatrix} G_{(1,1)}(k) & \cdots & G_{(1,n_u)}(k) \\ \vdots & G_{(i,j)}(k) & \\ G_{(n_y,1)}(k) & \cdots & G_{(n_y,n_u)}(k) \end{bmatrix} \begin{bmatrix} u_{(1)}(k) \\ \vdots \\ u_{(n_u)}(k) \end{bmatrix}$$

FRF MATRIX FRM

$$\underline{y}(k) = \underline{\underline{G}} \cdot \underline{u}(k)$$

- ONE MEASUREMENT (EXPERIMENT)

+ CONDITIONS ON INPUTS

- MULTIPLE EXPERIMENTS

n_u x SISO EXPERIMENT

- MULTIPLE EXPERIMENTS

+ CONDITIONS ON INPUTS (LESS HEAVY)