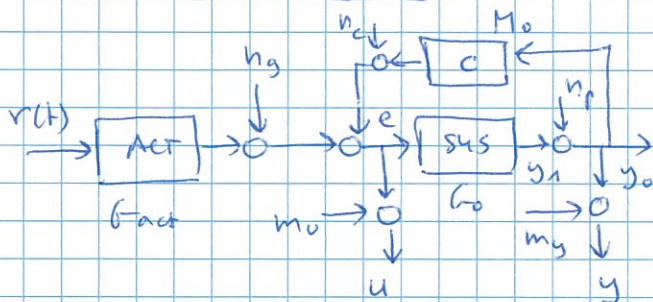


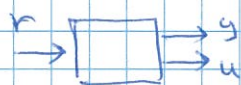
(PERIODIC INPUT
INTEGER # PERIODS)

ELIMINATES COMPLETELY (NO LEAKAGE)

INDIRECT FRF (ETFE) MEASUREMENTS



$$\hat{G}(j\omega_k) = \frac{\hat{\Phi}_{yu}(\omega_k)}{\hat{\Phi}_u(\omega_k)} \rightarrow \text{a.s. lim}_{N \rightarrow \infty} G_o(j\omega_k) \frac{1 + \frac{\sigma_{n_r}^2}{E|y_o|^2}}{1 + \frac{\sigma_u^2}{E|u|^2}}$$



$\sigma_u^2, \sigma_{n_r}^2 \neq 0$ ESTIMATE NOT CONSISTENT !

BIAS STAYS CONSTANT

$$\hat{G}(j\omega_k) = \frac{\hat{\Phi}_{yr}(k)}{\hat{\Phi}_{ur}(k)} = \frac{\frac{1}{N} \sum Y^{(k)}(k) \overline{R^{(k)}(k)}}{\frac{1}{N} \sum U^{(k)}(k) \overline{R^{(k)}(k)}} \rightarrow \text{a.s. lim}_{N \rightarrow \infty} \text{|||||}$$

(WITHOUT NOISES)

$$\begin{cases} Y = G_o E \\ E = G_{act} R - M_o Y = U \end{cases} \Rightarrow Y = G_o G_{act} R - G_o M_o Y \Rightarrow Y = \frac{G_{act} G_o}{1 + G_o M_o} R$$

$$\left[\Phi_{ur} = \frac{G_{act}}{1 + G_o M_o} R \Phi_{rr} \right]$$

$$\left[\Phi_{yr} = \frac{G_o G_{act}}{1 + G_o M_o} \Phi_{rr} \right]$$

$$\hat{G}(j\omega_k) \rightarrow G_o(j\omega_k)$$

CONSISTENT