

$$V_F(\theta, z) = \frac{1}{F} \sum \frac{|A(z)Y(z) - B(z)U(z)|^2}{\sigma_y^2(z)|A(z)|^2 + \sigma_u^2(z)|B(z)|^2 - 2\text{Re}(\sigma_{yu}^*(z)B(z)A(z))} \quad (8)(9)$$

$\sigma_y^2, \sigma_u^2, \sigma_{yu}^2$ NEEDED FROM DATA (4-6 REPETITION ENOUGH)

— EXACTLY KNOWN INPUTS: $\sigma_u^2 = \phi, \sigma_{yu}^2 = \phi$

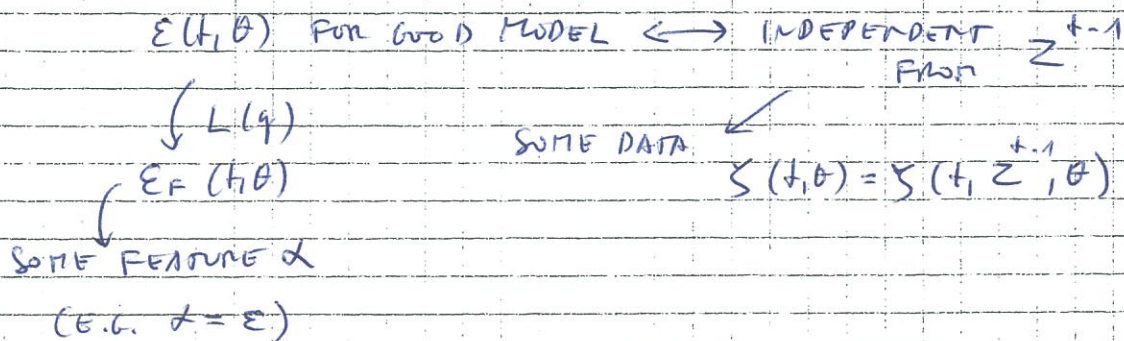
→ STARTING FROM MEASURED FRF: $G(\lambda_u)$

$$\begin{aligned} \mathcal{L} \quad Y(k) &= G(\lambda_u) & \sigma_y^2(k) &= \sigma_G^2(k) \\ U(k) &= 1 & \sigma_u^2(k) &= \phi \end{aligned}$$

PROPERTIES:

$$\text{VAR}(G(\lambda_u, \hat{\theta})) \approx \left(\frac{\partial G(\lambda_u, \theta)}{\partial \theta} \right) \text{cov}(\hat{\theta}) \left(\frac{\partial G(\lambda_u, \theta)}{\partial \theta} \right)^* \Big|_{\theta = \mathbb{E}\{\hat{\theta}\}}$$

7. CORRELATION OF PREDICTION ERROR & (PAST) DATA



$$f_N(\theta, z^N) = \frac{1}{N} \sum_{t=1}^N \zeta(t) \alpha(\varepsilon_F(t, \theta)) \quad (= \phi)$$

$$\hat{\theta}_N = \underset{\theta}{\text{SOLUTION}} [f_N(\theta, z^N) = \phi]$$

ERROR OF OPTIMAL
ESTIMATED MODEL



TO THE DATA USED
TO BUILD THE MODEL