

1)  $H_{cf}$  is always real valued :

$$\left. \begin{array}{l} |X_{cf}|^2 \in \mathbb{R} \\ |D_{cf}|^2 \in \mathbb{R} \end{array} \right\} H_{cf} \in \mathbb{R}$$

$$2) \quad D(f) \rightarrow 0 \Rightarrow H(f) = \frac{|X(f)|^2}{|X(f)|^2} = 1$$

$$D_{CFI} \rightarrow \infty \quad \Rightarrow \quad H_{CFI} = \frac{|X_{CFI}|^2}{|X_{CFI}|^2 + \infty} = 0$$

$$H_{GF} \leq 1$$

$$\frac{|X_{CFI}|^2}{|X_{CFI}|^2 + |D_{CFI}|^2} \leq 1$$

$$| \cdot (|X_{CF1}|^2 + |Y_{CF1}|^2)$$

$$|X_{CFI}|^2 \leq |X_{CFI}|^2 + |D_{CFI}|^2 \quad | - |X_{CFI}|^2$$

$$0 \leq |O_{\text{eff}}|^2 \quad \text{always true}$$

$$H(f) \geq 0$$

$$\frac{|X_{CF}|^2}{|X_{CF}|^2 + |O_{CF}|^2} \geq 0$$

$$1. (|K_{CF}|^2 + |D_{CF}|^2)$$

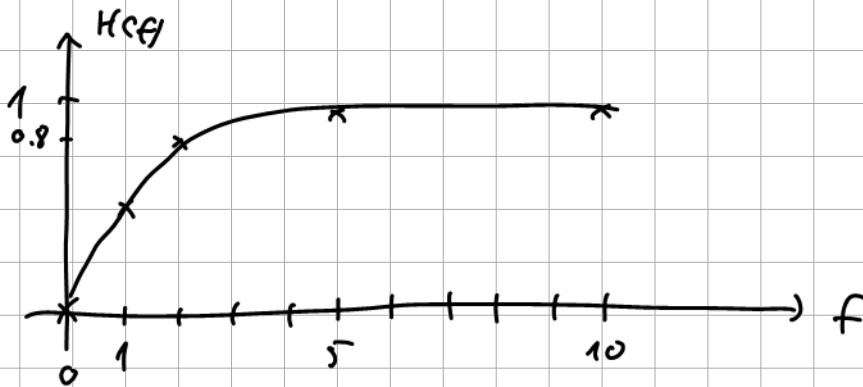
$$|X_{C_f}|^2 \geq 0$$

always true

$$3) \quad X(f) = f$$

$$|X(f)|^2 = f^2$$

$$H(f) = \frac{f^2}{f^2 + 1}$$



4)

$$SNR = 10 \log_{10} \frac{|X_{cf}|^2}{|D_{cf}|^2}$$

$$= 10 \log_{10} f^2$$

