

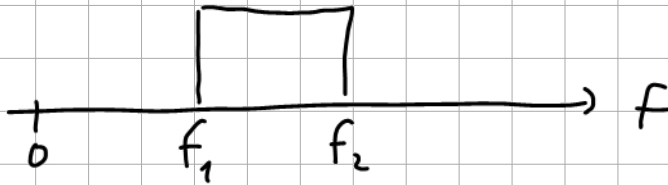
1)

$$\underbrace{x(n)}_{\text{input}} \rightarrow \boxed{h(n)} \rightarrow y(n) = h(n) * x(n)$$

$$\downarrow$$

$$Y(f) = H(f) \cdot X(f)$$

an ideal Bandpass has the following transfer function:



$$H(f) = 0 \quad \text{for } f < f_1 \text{ or } f > f_2$$

The inversion of this filter is in frequency domain given by:

$$X(f) = \frac{Y(f)}{H(f)}$$

The frequencies with  $H(f) = 0$  cannot be restored.

Frequencies with  $H(f) \ll 1$  leads to a strong gain  
for  $\frac{1}{H(f)}$ . By this also <sup>background-</sup>noise is getting much louder.



















