

$$H(s) = \frac{s}{s + W_c}$$

$$H(z) = \frac{\frac{2}{T_s} \left(\frac{1-z^{-1}}{1+z^{-1}} \right)}{\frac{2}{T_s} \left(\frac{1-z^{-1}}{1+z^{-1}} \right) + W_c}$$

$$H(z) = \frac{F' \left(\frac{1-z^{-1}}{1+z^{-1}} \right)}{F' \left(\frac{1-z^{-1}}{1+z^{-1}} \right) W_c}$$

$$H(z) = \frac{F'(1-z^{-1})}{F'(1-z^{-1}) + W_c(1+z^{-1})}$$

$$H(z) = \frac{Y(z)}{X(z)} = \frac{F' - F'z^{-1}}{(F' + W_c) + (W_c - F')z^{-1}}$$

$$Y(z)(F' + W_c) + Y(z)(W_c - F')z^{-1} = F'X(z) - F'X(z)z^{-1}$$

$$Y[n] = \frac{F'}{F' + W_c} x[n] - \frac{F'}{F' + W_c} x[n-1] - \frac{W_c - F'}{F' + W_c} y[n-1]$$

$$Y[n] = a x[n] - a x[n-1] - b y[n-1]$$

$$PB \rightarrow \frac{W_c z + W_c}{(F' + W_c)z + (W_c - F')} = \frac{6280z + 6280}{22280z - 9720}$$

$$PA \rightarrow \frac{F'z - F'}{(F' + W_c)z + (W_c - F')} = \frac{16000z - 16000}{22280z - 9720}$$

Polos e zeros ↗