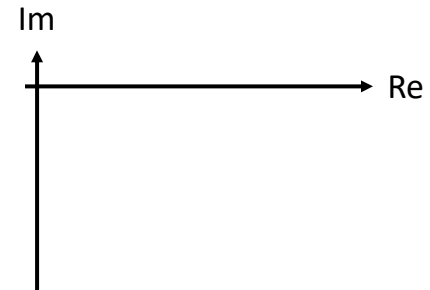
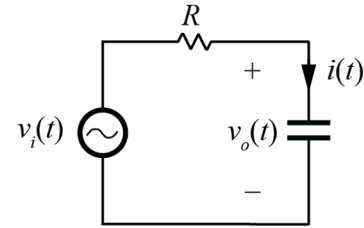


# Power Spectrum

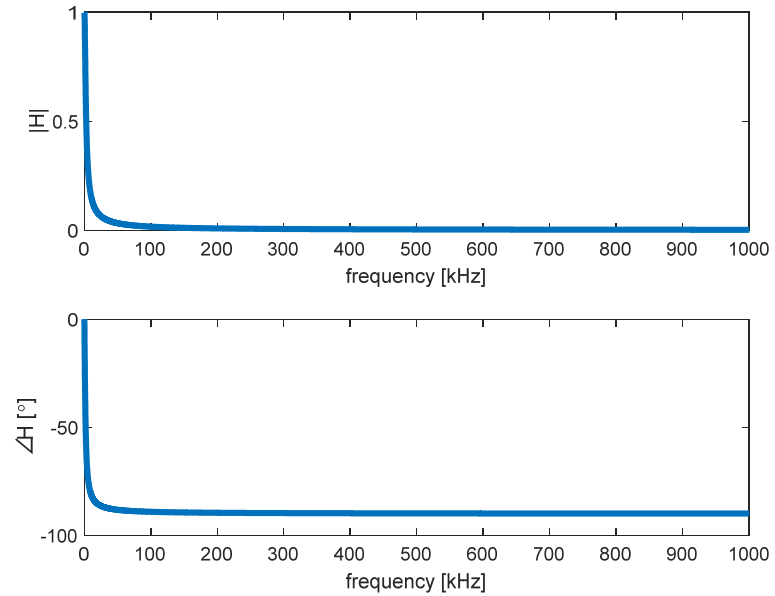
# Limitations of Phasor Analysis

# Limitations of Phasor Analysis

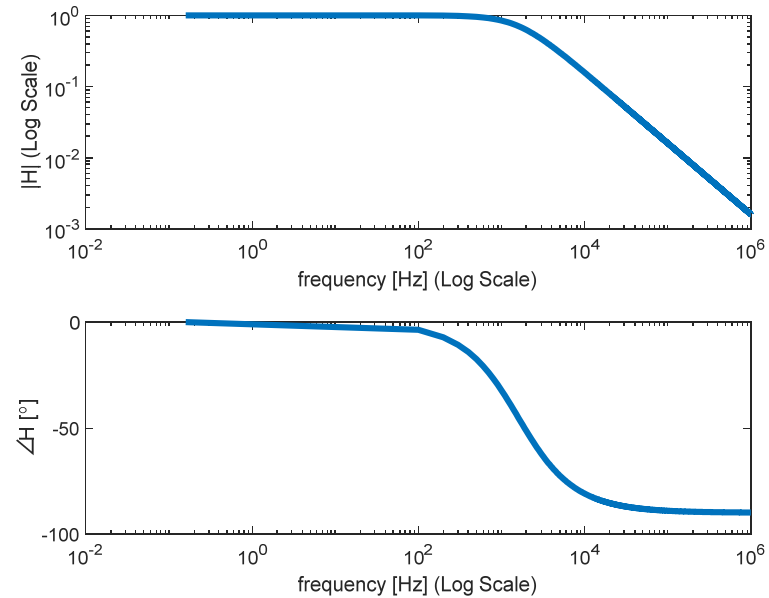
# Frequency Response



# Frequency Response



# Bode Plot – Frequency Response



# Fourier Series

Assume we have some function  $f(t)$  which is periodic with period  $T_0 = \frac{2\pi}{\omega_0}$

$$f(t) = a_0 + \sum_{k=1}^{\infty} a_k \cos(k\omega_0 t) + b_k \sin(k\omega_0 t)$$

$f(t)$  can be expressed this way if

1.  $f(t)$  is single-valued
2.  $\int_{t_0}^{t_0+T_0} |f(t)| dt$  exists
3.  $f(t)$  had finite discontinuities and max/min per period

