

# Impedances: RLC in Parallel (1)

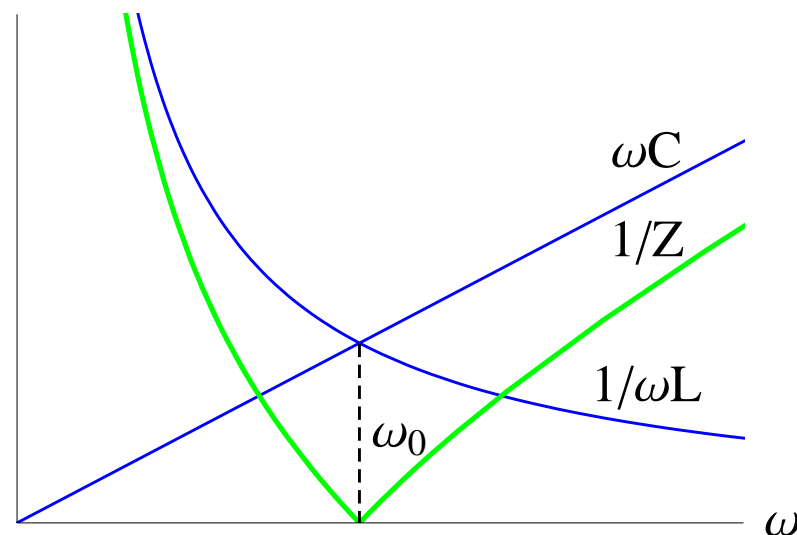
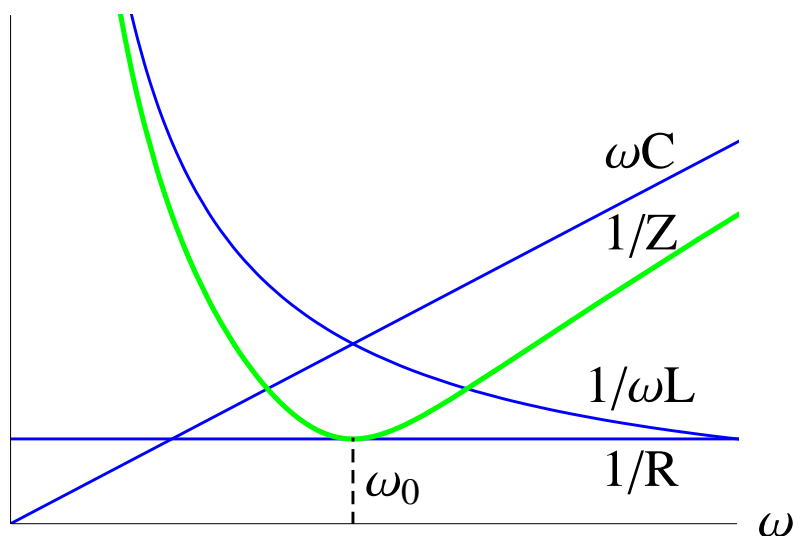


$$\frac{1}{Z} = \sqrt{\frac{1}{R^2} + \left(\omega C - \frac{1}{\omega L}\right)^2}$$

resonance at  $\omega_0 = \frac{1}{\sqrt{LC}}$

limit  $R \rightarrow \infty$

$$\frac{1}{Z} = \left| \omega C - \frac{1}{\omega L} \right|$$

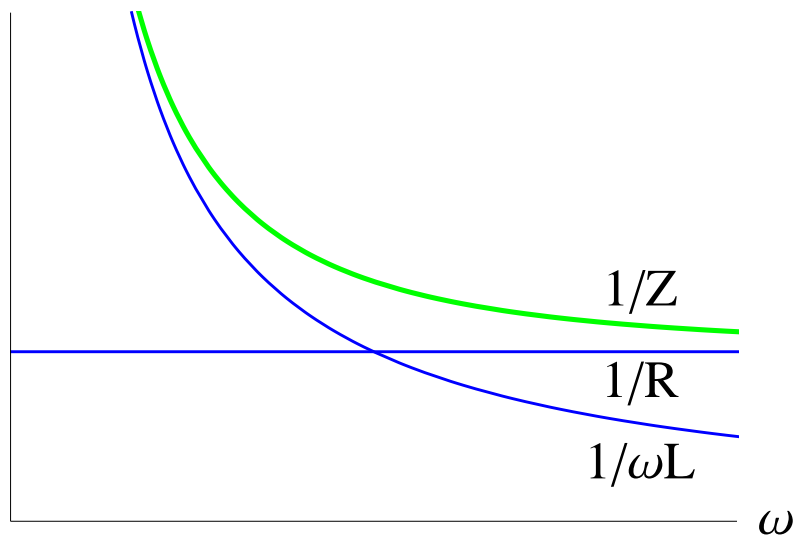


# Impedances: RLC in Parallel (2)



limit  $C \rightarrow 0$

$$\frac{1}{Z} = \sqrt{\frac{1}{R^2} + \frac{1}{(\omega L)^2}}$$



limit  $L \rightarrow \infty$

$$\frac{1}{Z} = \sqrt{\frac{1}{R^2} + (\omega C)^2}$$

