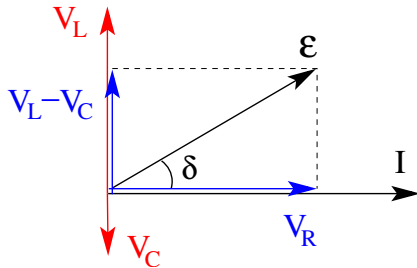




Impedance: $Z \equiv \frac{\mathcal{E}_{max}}{I_{max}} = \sqrt{R^2 + \left(\omega L - \frac{1}{\omega C}\right)^2}$

Current amplitude and phase angle:

- $I_{max} = \frac{\mathcal{E}_{max}}{Z} = \frac{\mathcal{E}_{max}}{\sqrt{R^2 + \left(\omega L - \frac{1}{\omega C}\right)^2}}$
- $\tan \delta = \frac{V_{L,max} - V_{C,max}}{V_{R,max}} = \frac{\omega L - 1/\omega C}{R}$



Voltages across devices:

- $V_R = RI = RI_{max} \cos(\omega t - \delta) = V_{R,max} \cos(\omega t - \delta)$
- $V_L = L \frac{dI}{dt} = -\omega L I_{max} \sin(\omega t - \delta) = V_{L,max} \cos\left(\omega t - \delta + \frac{\pi}{2}\right)$
- $V_C = \frac{1}{C} \int I dt = \frac{I_{max}}{\omega C} \sin(\omega t - \delta) = V_{C,max} \cos\left(\omega t - \delta - \frac{\pi}{2}\right)$