

AC Circuits



The current and the voltage are in phase: they simultaneously reach their maximum values, their minimum values, and their zero values.



The current and the voltage phasors are in the same direction because the current is in phase with the voltage.



$$\Delta v_R = I_{\max} R \sin \omega t = \Delta V_R \sin \omega t$$

$$\Delta v_L = I_{\max} X_L \sin\left(\omega t + \frac{\pi}{2}\right) = \Delta V_L \cos \omega t$$

$$\Delta v_C = I_{\max} X_C \sin\left(\omega t - \frac{\pi}{2}\right) = -\Delta V_C \cos \omega t$$



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H.A. Thompson



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