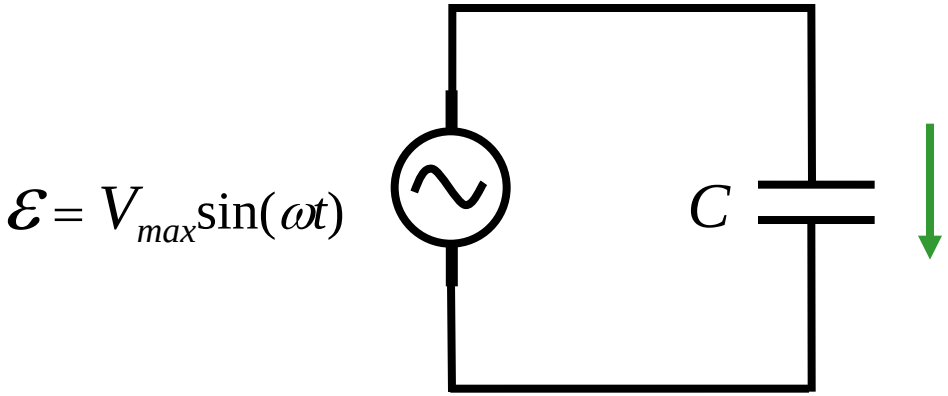
Capacitors

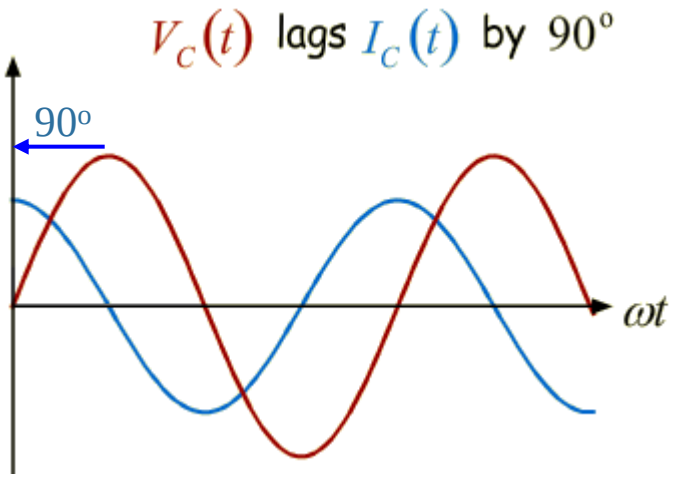
$$Q = CV = CV_{max}\sin(\omega t)$$

$$I = dQ/dt$$



$$I = V_{max}\omega C\cos(\omega t)$$

Amplitude $= V_{max}/X_C$



where $X_C = 1/\omega C$
is like the "resistance"
of the capacitor
X_C depends on ω