

$$V_c = v \cdot \left(\frac{1}{1 + jRc\omega} \right)$$

$$\hookrightarrow |v_c| = |v| \cdot \frac{1}{\sqrt{1 + R^2 c^2 \omega^2}}$$

$$\hookrightarrow \varphi(v_c) = \varphi(v) + \varphi\left(\frac{1}{1 + jRc\omega}\right)$$