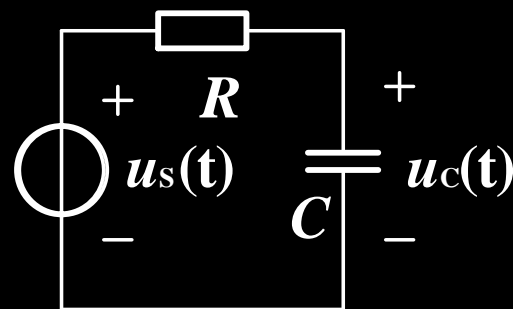


## 频率响应例2

**例：**如图电路， $R=1\Omega$ ， $C=1F$ ，以  
 $u_C(t)$ 为输出，求其 $h(t)$ 。

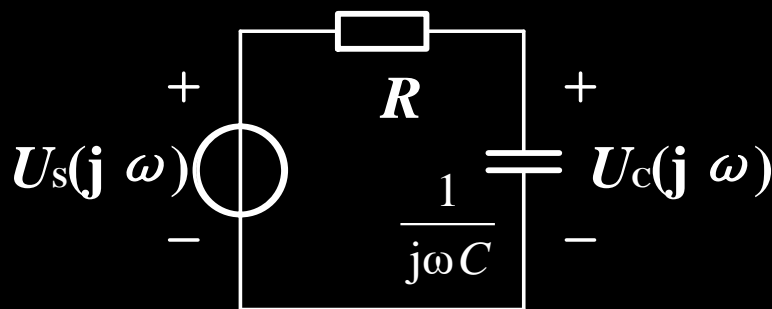
若 $u_s(t)=2\cos(t)$ ，求 $u_C(t)=?$



**解：**画电路频域模型

$$H(j\omega) = \frac{U_C(j\omega)}{U_s(j\omega)} = \frac{\frac{1}{j\omega C}}{R + \frac{1}{j\omega C}} = \frac{1}{j\omega + 1}$$

$$h(t) = e^{-t} \varepsilon(t)$$



**由于**  $H(j1) = \frac{1}{j1+1} = \frac{1}{\sqrt{2}} \angle -45^\circ$   $u_C(t) = \sqrt{2} \cos(t - 45^\circ) \text{ V}$