EC2272 ANÁLISIS DE CIRCUITOS II – FORMULARIO N° 1

RESPUESTA NATURAL DE CIRCUITOS DE SEGUNDO ORDEN

$$\frac{d^2 X_h(t)}{dt^2} + 2\alpha \frac{dX_h(t)}{dt} + \omega_0^2 X_h(t) = 0$$

$\alpha > \omega_0$	$s_1 = -\alpha - \sqrt{\alpha^2 - \omega_0^2}\ ;\ s_2 = -\alpha + \sqrt{\alpha^2 - \omega_0^2}$	$X_h(t) = A\,\mathrm{e}^{s_1 t} + B\,\mathrm{e}^{s_2 t}$
$\alpha < \omega_0$	$\omega_d = \sqrt{\omega_0^2 - \alpha^2}$	$X_h(t) = \mathrm{e}^{-\alpha t}\left[A\cos(\omega_d\, t) + B\,\mathrm{sen}(\omega_d\, t)\right]$
$\alpha = \omega_0$		$X_h(t) = \mathrm{e}^{-\alpha t}(A + Bt)$

RÉGIMEN SINUSOIDAL PERMANENTE

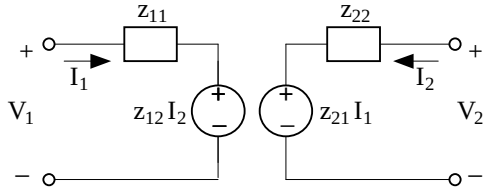
Voltajes	*Corrientes*	*Inmitancias*
$\mathbf{V} = V\,\mathrm{e}^{j\phi_v}$ $v(t) = \mathrm{Re}\left\{\mathbf{V}\,\mathrm{e}^{j\omega t}\right\} = V\cos(\omega t + \phi_v)$	$\mathbf{I} = I\,\mathrm{e}^{j\phi_i}$ $i(t) = \mathrm{Re}\left\{\mathbf{I}\,\mathrm{e}^{j\omega t}\right\} = I\cos(\omega t + \phi_i)$	$Z = \mathbf{V}/\mathbf{I} = R + jX$ $Y = \mathbf{I}/\mathbf{V} = G + jB$

REDES DE DOS PUERTOS

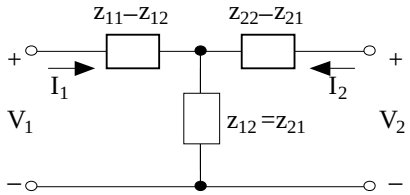
Parámetros Z

$V_1 = z_{11} I_1 + z_{12} I_2$

$V_2 = z_{21} I_1 + z_{22} I_2$



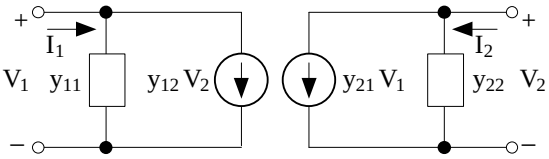
Redes Pasivas:



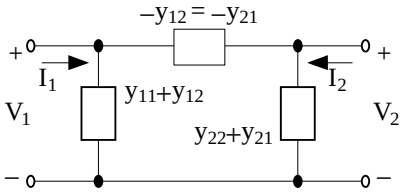
Parámetros Y

$I_1 = y_{11} V_1 + y_{12} V_2$

$I_2 = y_{21} V_1 + y_{22} V_2$



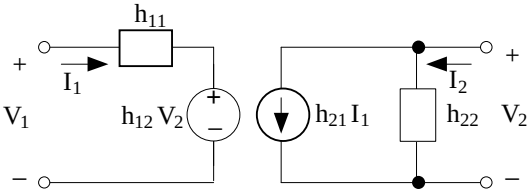
Redes Pasivas:



Parámetros H

$V_1 = h_{11} I_1 + h_{12} V_2$

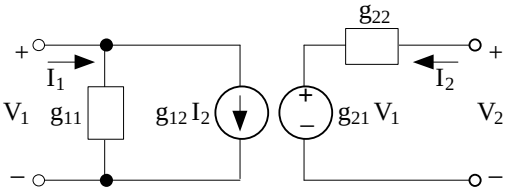
$I_2 = h_{21} I_1 + h_{22} V_2$



Parámetros G

$I_1 = g_{11} V_1 + g_{12} I_2$

$V_2 = g_{21} V_1 + g_{22} I_2$



Parámetros ABCD

$V_1 = AV_2 - BI_2$

$I_1 = CV_2 - DI_2$

Parámetros abcd

$V_2 = aV_1 - bI_1$

$I_2 = cV_1 - dI_1$