## Spóla + raunviðnám Raðtenging
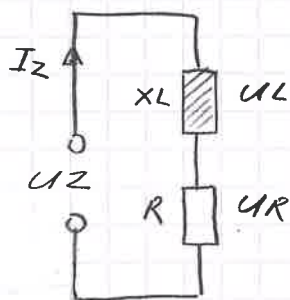
$$U_z = \sqrt{U_R^2 + U_L^2}$$

$$Z = \sqrt{R^2 + X_L^2}$$

$$I_z = \frac{U_z}{Z}$$

$$\cos \varphi = \frac{U_R}{U_z}$$
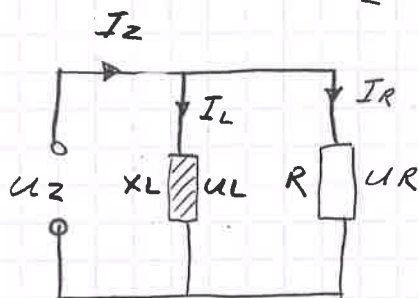


## Spóla + raunviðnám Hliðtenging

$$I_z = \sqrt{I_R^2 + I_L^2}$$

$$Z = \frac{U_z}{I_z}$$

$$I_R = \frac{U_R}{R} \qquad I_L = \frac{U_L}{X_L}$$
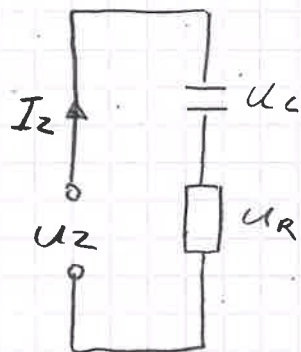
$$\cos \varphi = \frac{I_R}{I_z}$$



## þéttir + raunviðnám Raðtenging

$$Z = \sqrt{R^2 + X_C^2}$$

$$I_z = \frac{U_z}{Z}$$

$$U_z = \sqrt{U_R^2 + U_C^2}$$
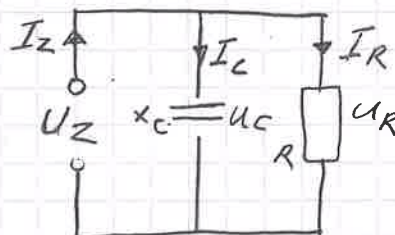
$$\cos \varphi = \frac{U_R}{U_z}$$



## þéttir - raunviðnám Hliðtenging

$$I_z = \sqrt{I_R^2 + I_C^2}$$

$$Z = \frac{U_z}{I_z}$$

$$I_R = \frac{U_R}{R} \qquad I_C = \frac{U_C}{X_C}$$

$$\cos \varphi = \frac{I_R}{I_z}$$



## Viðnám:

$$X_C = \frac{1}{2 \cdot \pi \cdot f \cdot C}$$

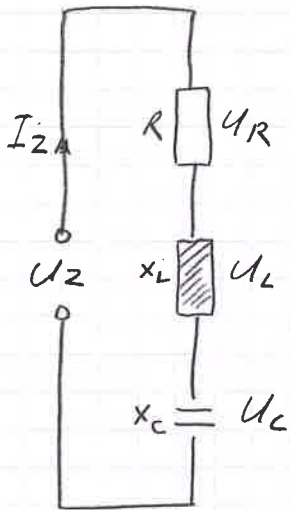$$X_L = 2 \cdot \pi \cdot f \cdot L$$

$X_C = $ Launviðnám þéttis
$X_L = $ Launviðnám spólu
$R = $ Raunviðnám

## Eigin tíðni:

Eigin tíðni er þegar $X_L = X_C$

$$f = \sqrt{\frac{1}{4 \cdot \pi^2 \cdot L \cdot C}}$$

## Raunviðnám + spóla + þéttir Raðtenging.



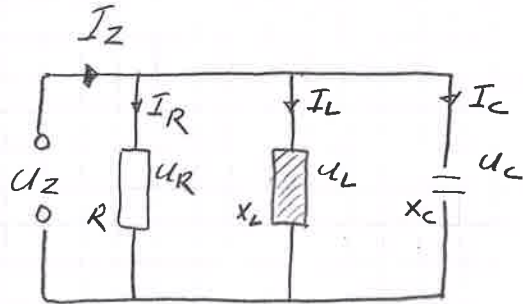$$Z = \sqrt{R^2 + (X_L - X_C)^2}$$

$$U_Z = \sqrt{U_R^2 + (U_L - U_C)^2}$$

$$P = U \cdot I \cdot \cos\varphi$$

$$\cos\varphi = \frac{U_R}{U_Z}$$
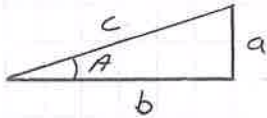
## Raunviðnám + spóla + þéttir Hliðtenging.



$$I_Z = \sqrt{I_R^2 + (I_C - I_L)^2}$$

$$Z = \frac{U_Z}{I_Z}$$

$$\cos\varphi = \frac{I_R}{I_Z}$$

$$P = U \cdot I \cdot \cos\varphi$$



$$\sin A = \frac{a}{c}$$

$$\cos A = \frac{b}{c}$$
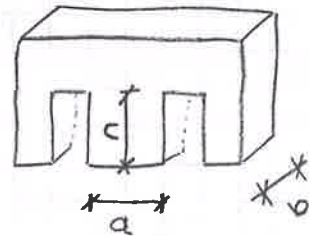
$$\tan A = \frac{a}{b}$$

$$c^2 = a^2 + b^2$$

$$\varepsilon = \varepsilon_0 \cdot \varepsilon_r$$

$\varepsilon_0 = $ rafsvari lofttæmis
$\varepsilon_r = $ rafsvari efnis

$l = $ fjarlægð milli platanna
$A = $ flatarmál platnanna



$$C = \frac{\varepsilon_r \cdot \varepsilon_0 \cdot A}{l}$$

### Virsverleiki á forvafi:

$$A = \frac{I}{J}$$

$A = $ þverflatarmál
$J = 2,8 = $ straum þéttleiki

### spennar:

### straumur á forvafi:

$$I = \frac{s}{u}$$



### Afl sem hægt er að yfirfæra
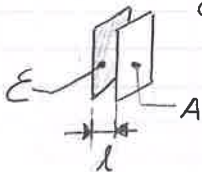
$s = $ sýndarafl
$vk = a \cdot b \cdot c$
$dw = \frac{a}{2}$

$$s = \frac{vk \cdot dw}{0,8}$$

### Taplaus spennir:

$$\frac{u_1}{u_2} = \frac{N_1}{N_2} = \frac{I_2}{I_1}$$