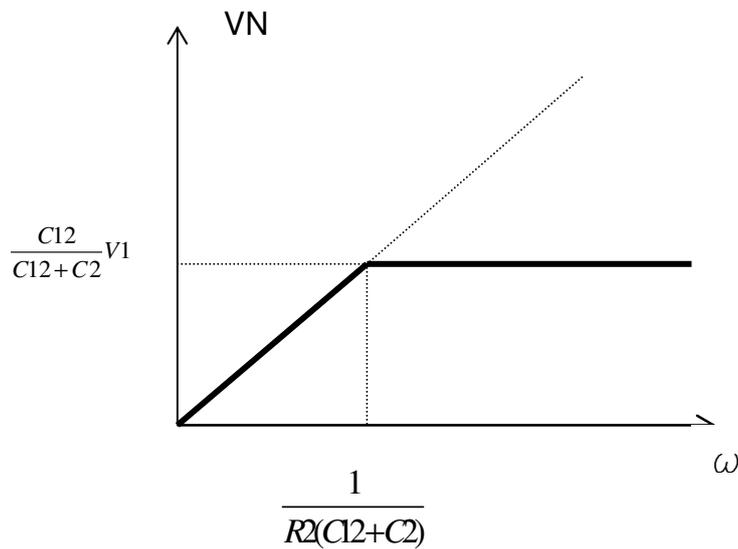
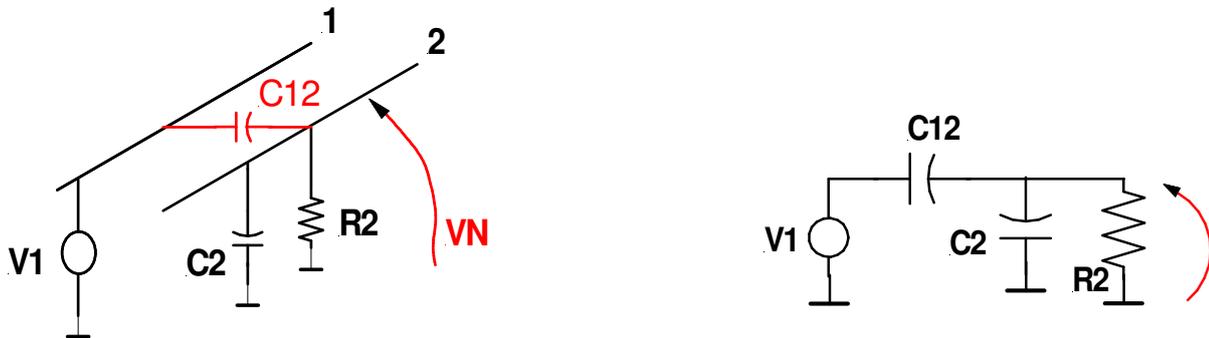


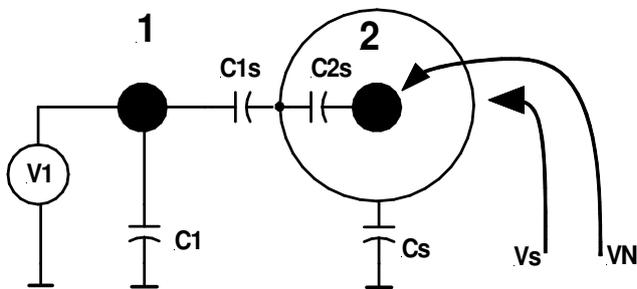
ACOPLAMIENTO CAPACITIVO ENTRE CONDUCTORES



$$VN = \frac{C12}{C1 + C2} \frac{j\omega R2(C1 + C2)}{1 + j\omega R2(C1 + C2)} \bullet V1$$

$$VN = j\omega R2 \cdot C12 \cdot V1$$

Agregando un blindaje:

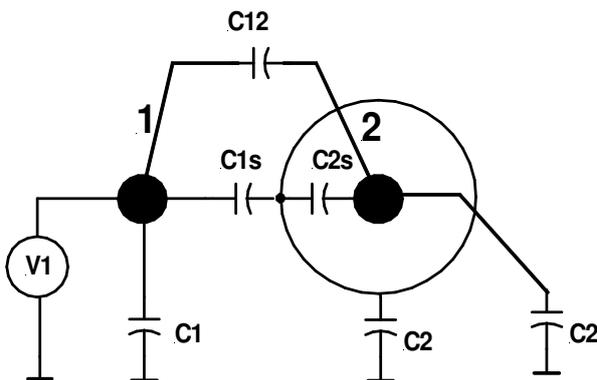


$$V_s = \frac{C_{1s}}{C_{1s} + C_s} V_1$$

$$V_N = V_s$$

La solución hacer $V_s = 0$

pero la realidad es



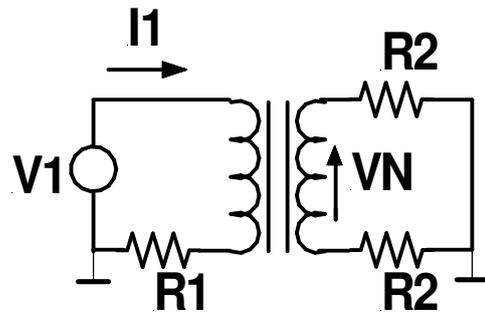
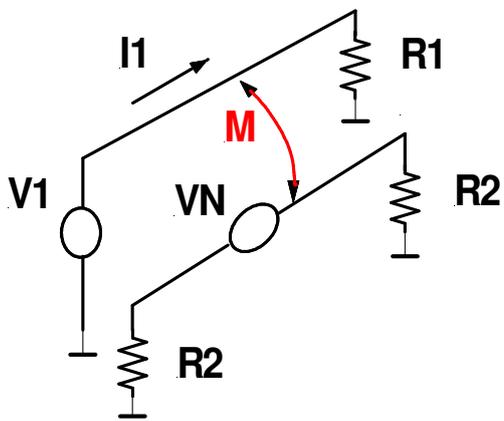
$$V_N = \frac{C_{12}}{C_{12} + C_2 + C_{2s}} V_1$$

Donde C_{12} tiene en cuenta las imperfecciones del blindaje y las porciones no cubiertas.

Podemos considerar (de nuevo)

$$V_N = j\omega R_2 C_{12} V_1$$

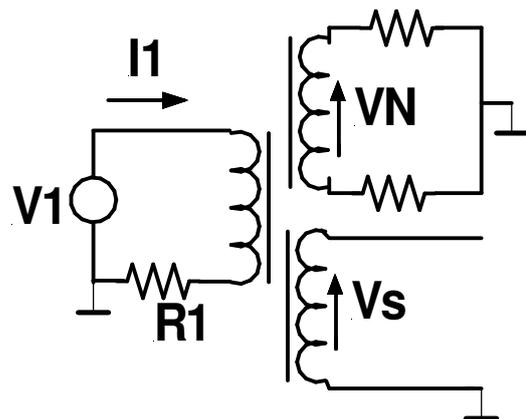
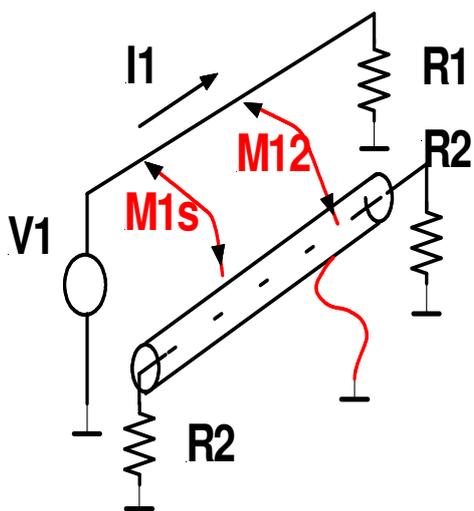
ACOPLAMIENTO INDUCTIVO:



$$M = \frac{\phi_{12}}{I_1}$$

$$V_N = j\omega B A \cos \theta$$

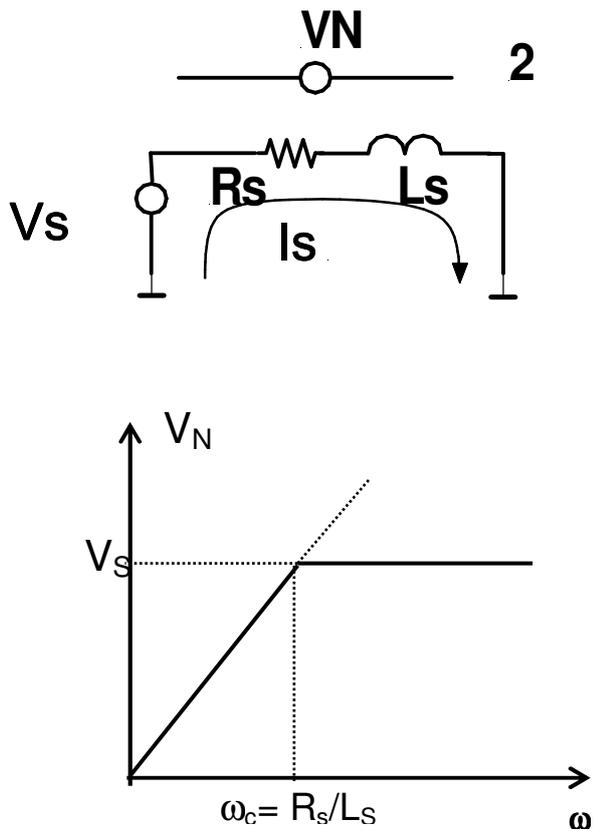
$$V_N = j\omega M I_1$$



$$V_N = j\omega M_{12} I_1$$

$$V_S = j\omega M_{1S} I_1$$

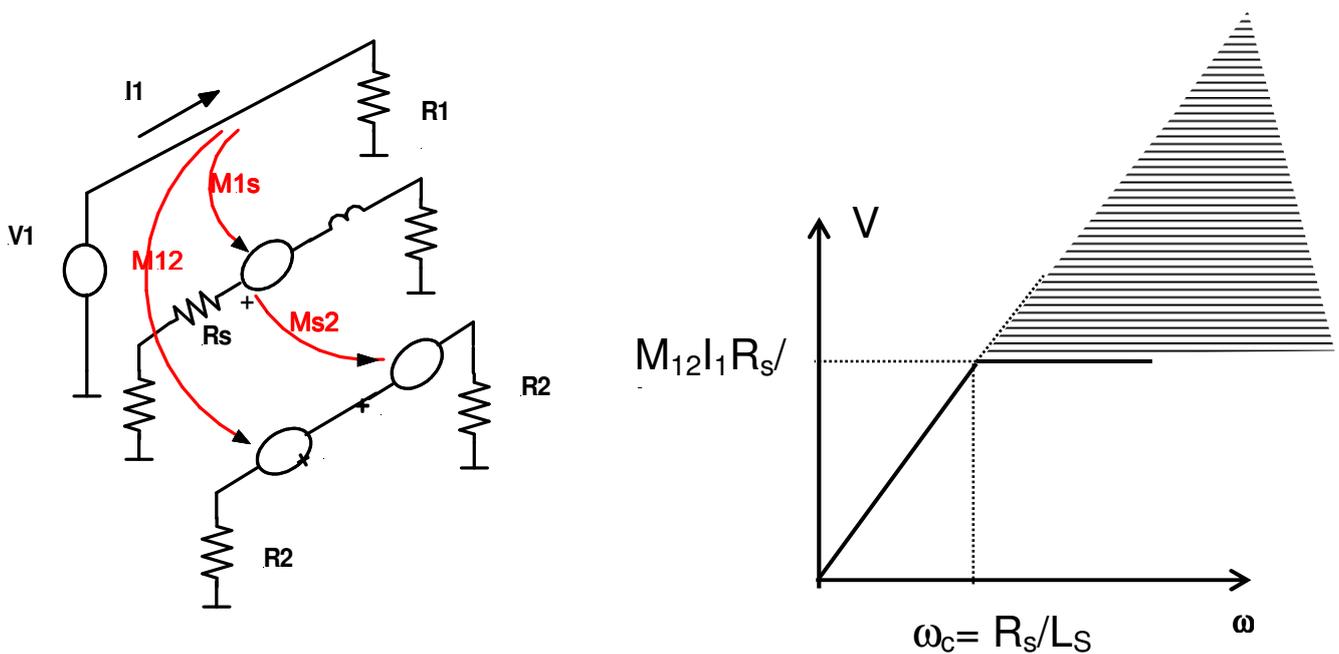
Conectando la malla a tierra en AMBOS extremos:



$$I_s = \frac{V_s}{L_s} \left(\frac{1}{j\omega + \frac{R_s}{L_s}} \right)$$

$$V_N = \frac{j\omega}{j\omega + \frac{R_s}{L_s}} V_s$$

f_c : frecuencia de corte de la malla (entre 600Hz y 2KHz para algunos cables de uso común)



EJEMPLOS:

ACOPLAMIENTO INDUCTIVO EN CABLES:
(W. Ott. Noise Reduccion Techniques, 1987)

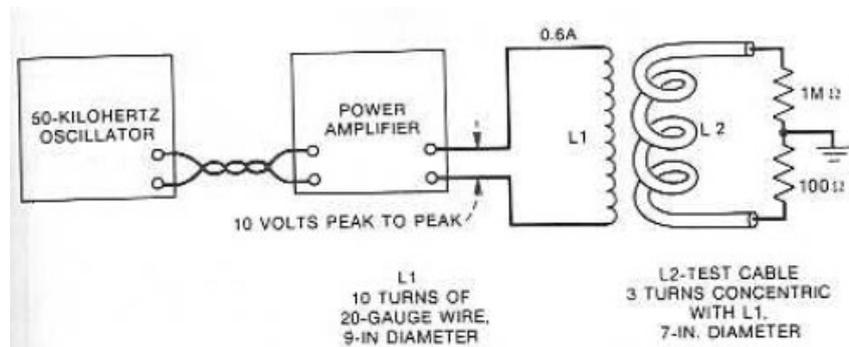


Figure 2-27. Test setup of inductive coupling experiment.

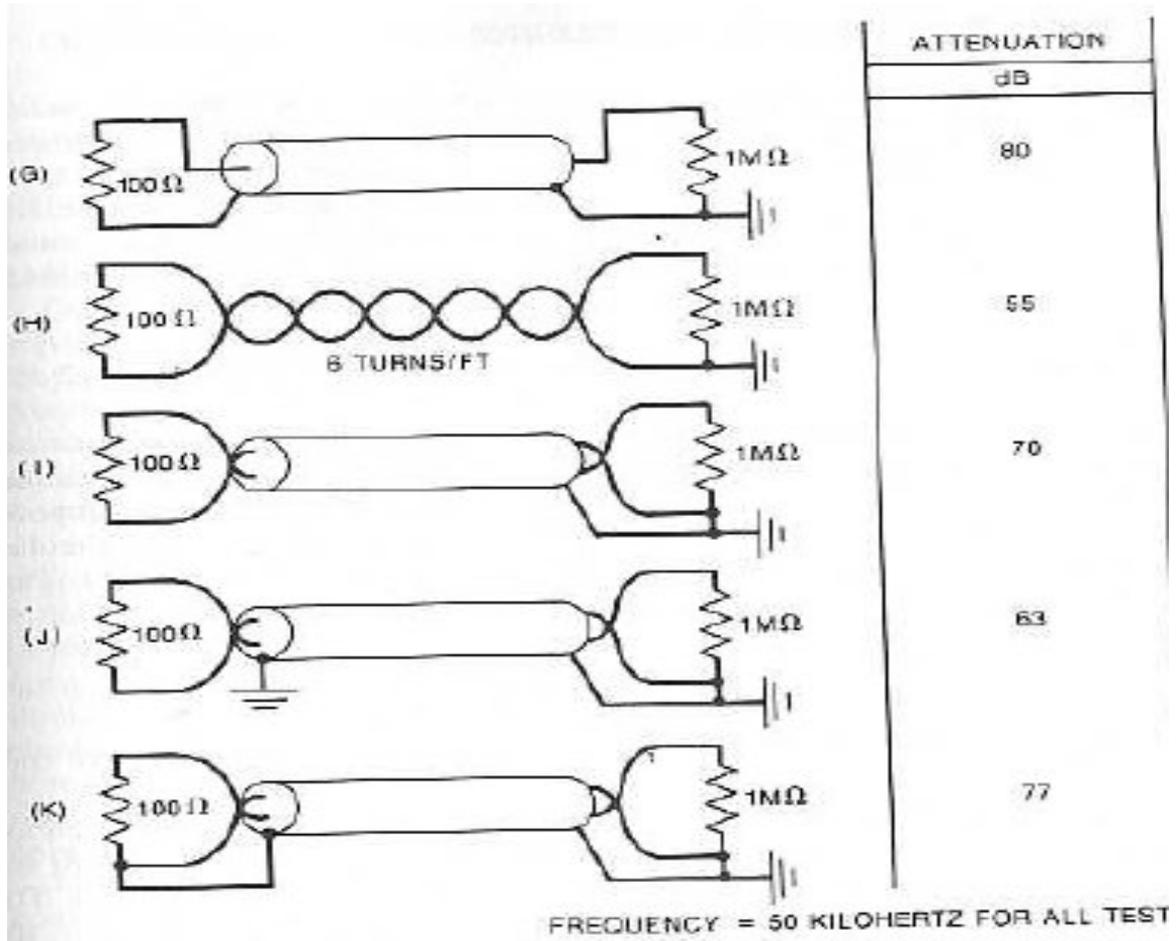


Figure 2-29. Results of inductive coupling experiment; all circuits grounded at one end of

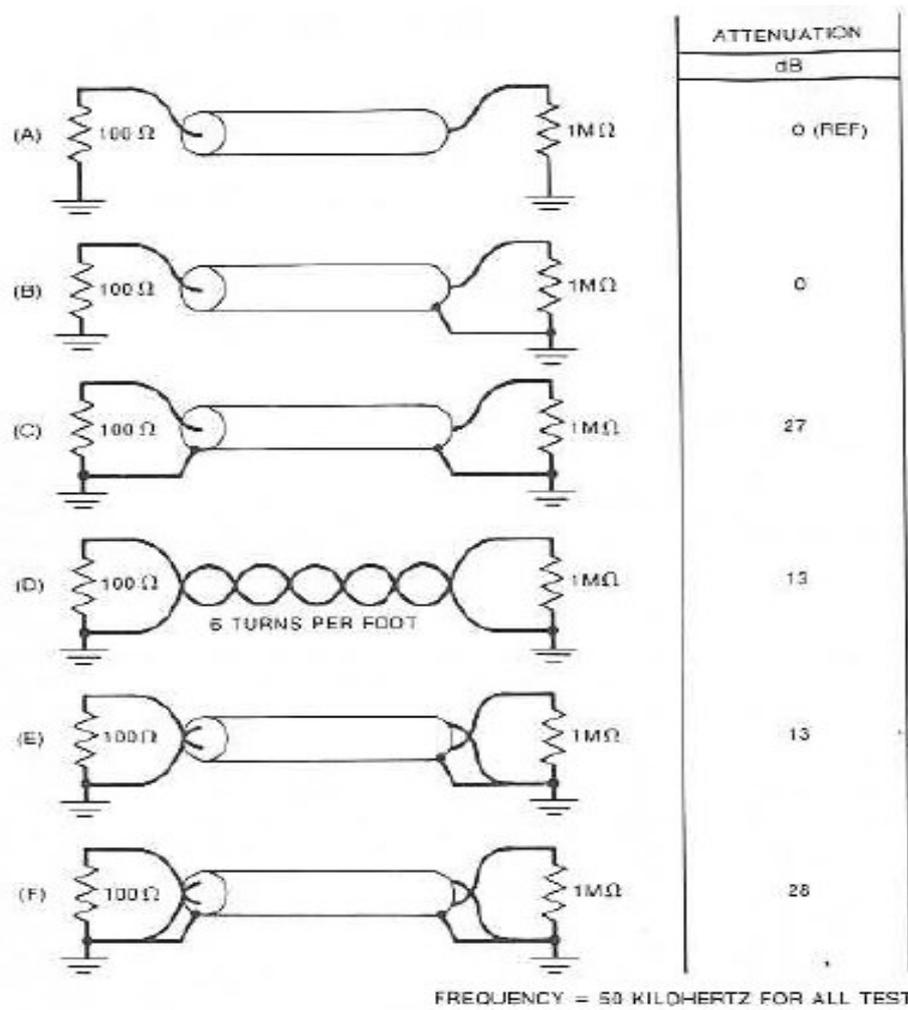


Figure 2-28. Results of inductive coupling experiment; all circuits grounded at both ends.

PAUL: EFFECT OF PIGTAILS ON CROSSTALK

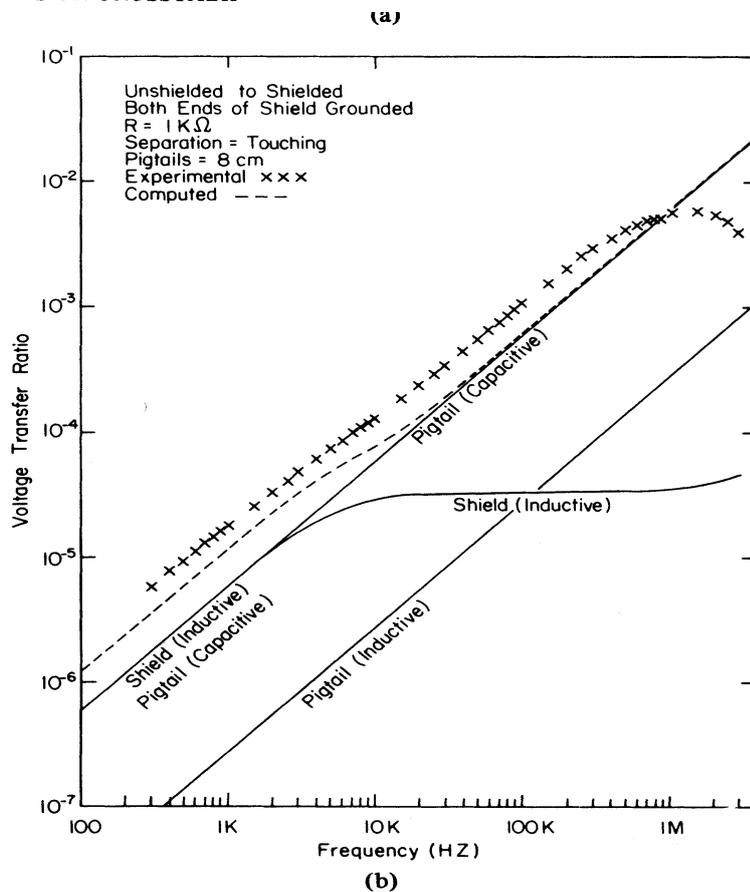


Fig. 8. The individual coupling contributions for unshielded-to-shielded configurations. (a) $R = 50 \Omega$. (b) $R = 1 \text{ k}\Omega$.

