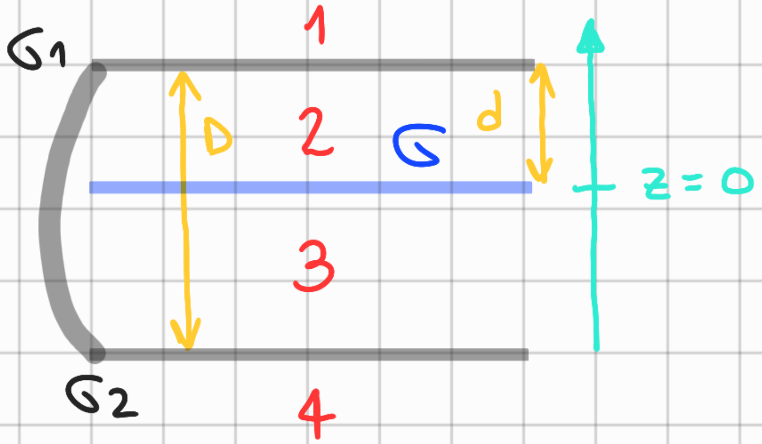

$$\bar{E}(\bar{r}) = \frac{1}{2\varepsilon_0}\begin{cases} \sigma_1 + \sigma_2 + \sigma & ① \quad z > d \\ -\sigma_1 + \sigma + \sigma_2 & ② \quad d > z > 0 \\ -\sigma_1 - \sigma + \sigma_2 & ③ \quad 0 > z > d - D \\ -(\sigma_1 + \sigma_2 + \sigma) & ④ \quad z < d - D \end{cases}$$

Como están unidos por un cable:

$$\sigma_1 + \sigma_2 = 0 \longrightarrow \sigma_1 = -\sigma_2$$

Ahora calculo el potencial $\bar{E} = -\bar{\nabla} V$

$$V(\bar{r}) = \frac{1}{2\varepsilon_0}\begin{cases} -\sigma z + A & ① \\ -(2\sigma_2 + \sigma) z + B & ② \\ -(2\sigma_2 - \sigma) z + C & ③ \\ -\sigma z + E & ④ \end{cases}$$

Planteo continuidad e impongo $V=0$ en los conductores.

- $z=d$

$$-\sigma d + A = -(2\sigma_2+\sigma)d + B$$

- $z=0$

$$B = C$$

- $z=d-D$

$$-(2\sigma_2-\sigma)(d-D) + C = -\sigma(d-D) + E$$

$$\Rightarrow \quad A = \sigma d$$

$$B = C = d(2\sigma_2+\sigma)$$

$$E = \sigma(D-d)$$

$$-(2\sigma_2-\sigma)(d-D) + \overbrace{d(2\sigma_2+\sigma)}^{C} = -\sigma(d-D) + \overbrace{\sigma(D-d)}^{E}$$

$\Rightarrow$ Despejo:

$$\boxed{\sigma_2 = \frac{(D-d)}{D}\cdot\sigma}$$