Un cas avec deux conducteur (genre un coax mais pas nécessairement)

$$\begin{cases} V(z,t) = V_+ e^{i(kz-\omega t)} + V_- e^{-i(kz+\omega t)} \\ I(z,t) = -\frac{V_+}{Z_0} e^{i(kz-\omega t)} + \frac{V_-}{Z_0} e^{-i(kz+\omega t)} \end{cases}$$

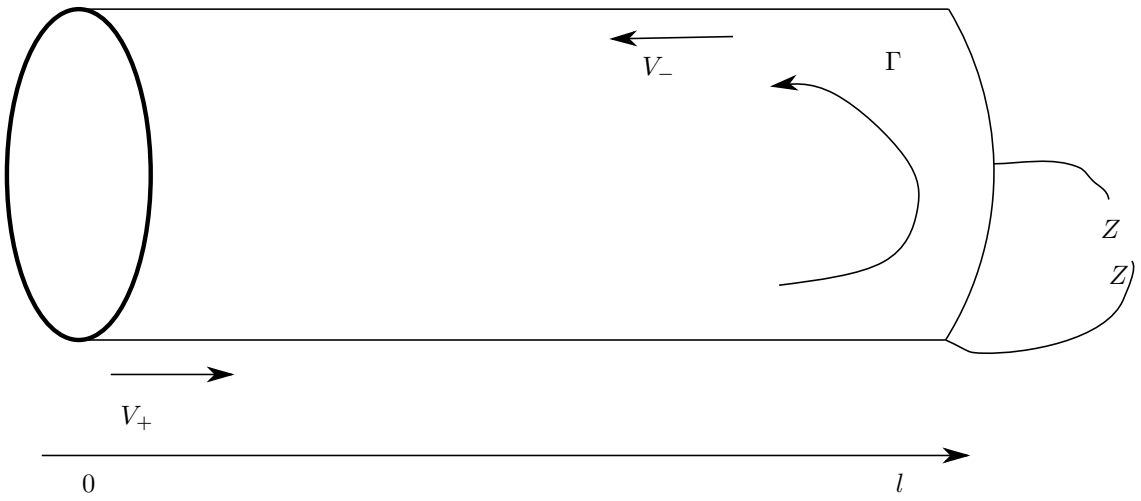

FIGURE 1 – Onde qui se propage dans un machin

$$V_-(z=l,\omega) = \Gamma(\omega) V_+(z=l,\omega)$$

$$V(z=l,\omega) = Z(\omega) I(z=l,\omega)$$

$$Z\left(\frac{-V_+ + V_-}{Z_0}\right) = V_+ V_-$$

$$V_-(Z_0 - Z) = V_+(+Z + Z_0)$$

$$\Gamma = \frac{V_-}{V_+} = \frac{-Z + Z_0}{Z_0 + Z}$$

$$\boxed{\Gamma = \frac{Z - Z_0}{Z + Z_0}}$$

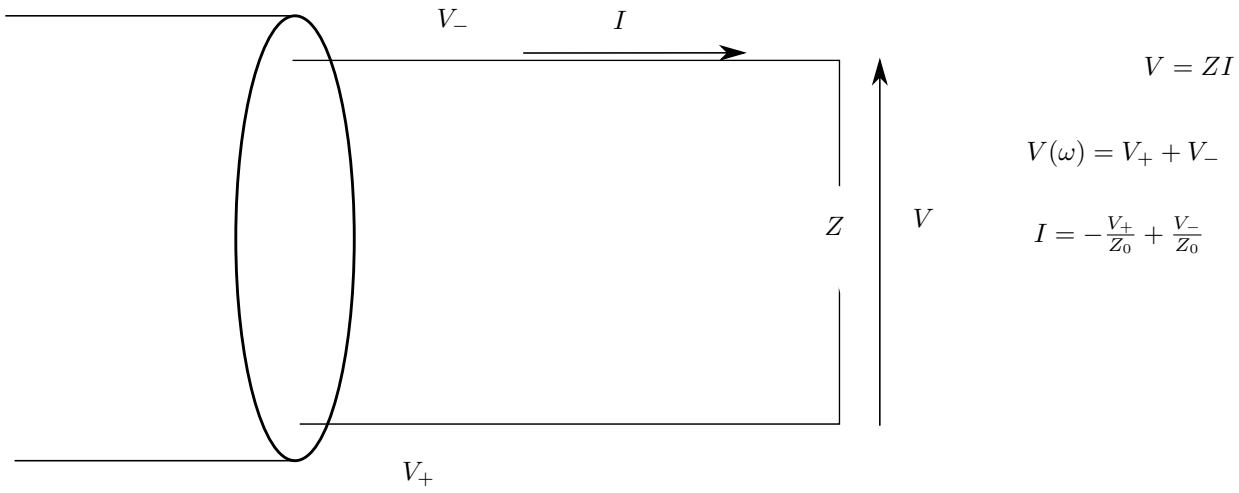

FIGURE 2 – Circuit éléctrique

$$\implies \text{si } Z = Z_0 \text{ alors } \Gamma = 0$$

$$Z = \infty \implies \text{circuit ouvert} \implies \Gamma = 1 \wedge I = 0$$