I. ANALOG OF DIFFUSION CONSTANT

For the discrete RC model, define the analog of the diffusion constant. What are its physical units, and how do you express that constant in terms of R and C?

If we look at a wire of the cable, we can define its resistance per unit length $\mathbf{r_m}$ and capacitance per unit length $\mathbf{c_m}$ as a function of the radius (a) of the wire.

$$\mathbf{r_m} = \frac{R_m}{2\pi a}\mathbf{c_m} = C_m 2\pi a. \tag{1}$$