Semester S1

Foundations of electromagnetic wave propagation

TUTORIAL 2

TRANSIENT STATE PROPAGATION COMPUTATION

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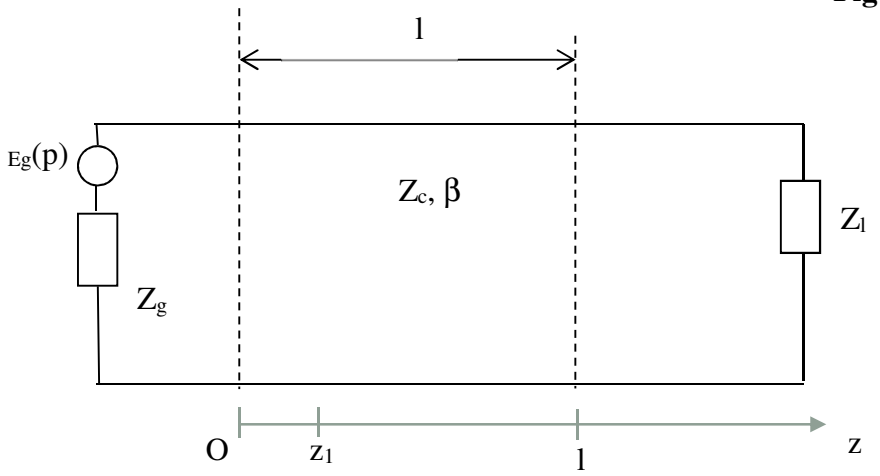
A lossless transmission line (propagation constant β , characteristic impedance Zc, length l) is loaded at its input by a generator (internal impedance Z_g, EMF E_g) and at its output on the load Z_L.

We consider :

- $Z_g = Z_c = 50\ \Omega$
- Z_L is the impedance of an open circuit
- $E_g(p)$ is the Laplace transform of the Heaviside function

Figure 1



Applying the formula given in the lesson, compute the voltage v(z,t) and the current i(z,t).

Draw these voltage and current at the z_1 point.