



Calculation of Initial Conditions

Integration step size:

1. Maximum Frequency Rule:

- Step size has to be smaller than 1/10 of the maximum frequency f_{max} of the transient

$$t_{min} \leq \frac{1}{10} \cdot \frac{1}{f_{max}}$$

Example:

$$f_{max} = 2 \text{ kHz}$$
$$t_{min} \leq 50 \mu\text{s}$$

2. Step Size Constraint Rule:

- Step size has to be smaller than minimum travel time of any line in the network

$$\tau_{line} = l_{line} \cdot \sqrt{L' \cdot C'}$$

Hint: Adapt step size to cater for smallest travelling time of all modes

3. Step Size Accuracy Rule:

- Divide the used step size by 2 and run the simulation again. If results differ, reduce the step size further

