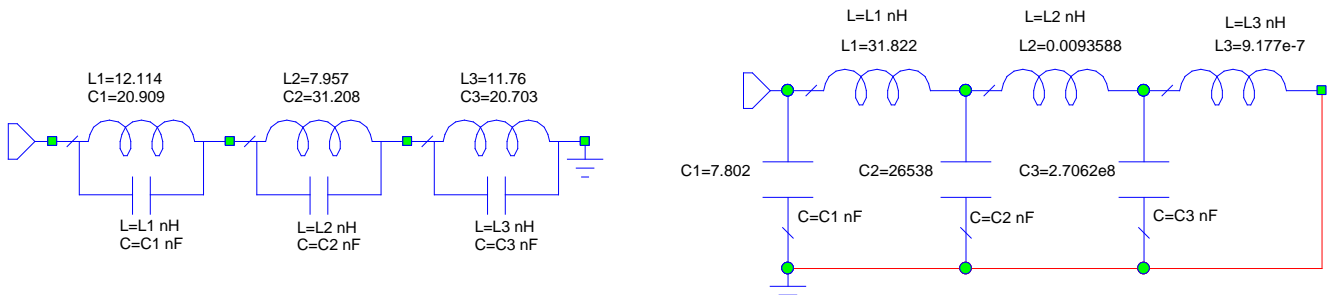


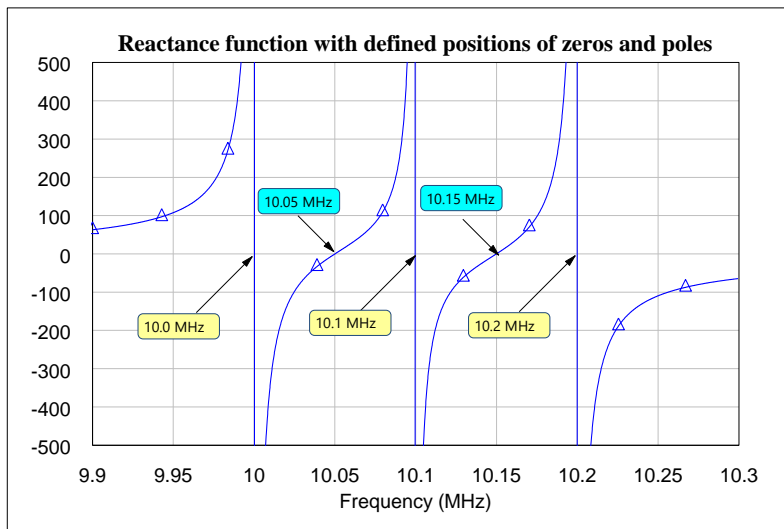
## Example and questions related to the synthesis of reactance functions (foster, cauer)

Two oneport LC-networks are shown in the following figures. The poles and zeros of the reactance function are placed at:

$p_1 = 10.0 \text{ MHz}$ ,  $p_2 = 10.10 \text{ MHz}$ ,  $p_3 = 10.20 \text{ MHz}$   
 $z_1 = 0$ ,  $z_2 = 10.05 \text{ MHz}$ ,  $z_3 = 10.15 \text{ MHz}$

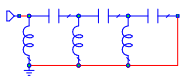


Those two networks are equivalent and are canonical realizations of the network function. The reactance function is shown in the next figure.



This leads to the following interesting questions:

- Can you show that the networks are equivalent?
- Can you analyze the second network with a simulation software? (Please note the values of the elements)
- Can you calculate the elements values of the following topology?



- How did I find the networks?